

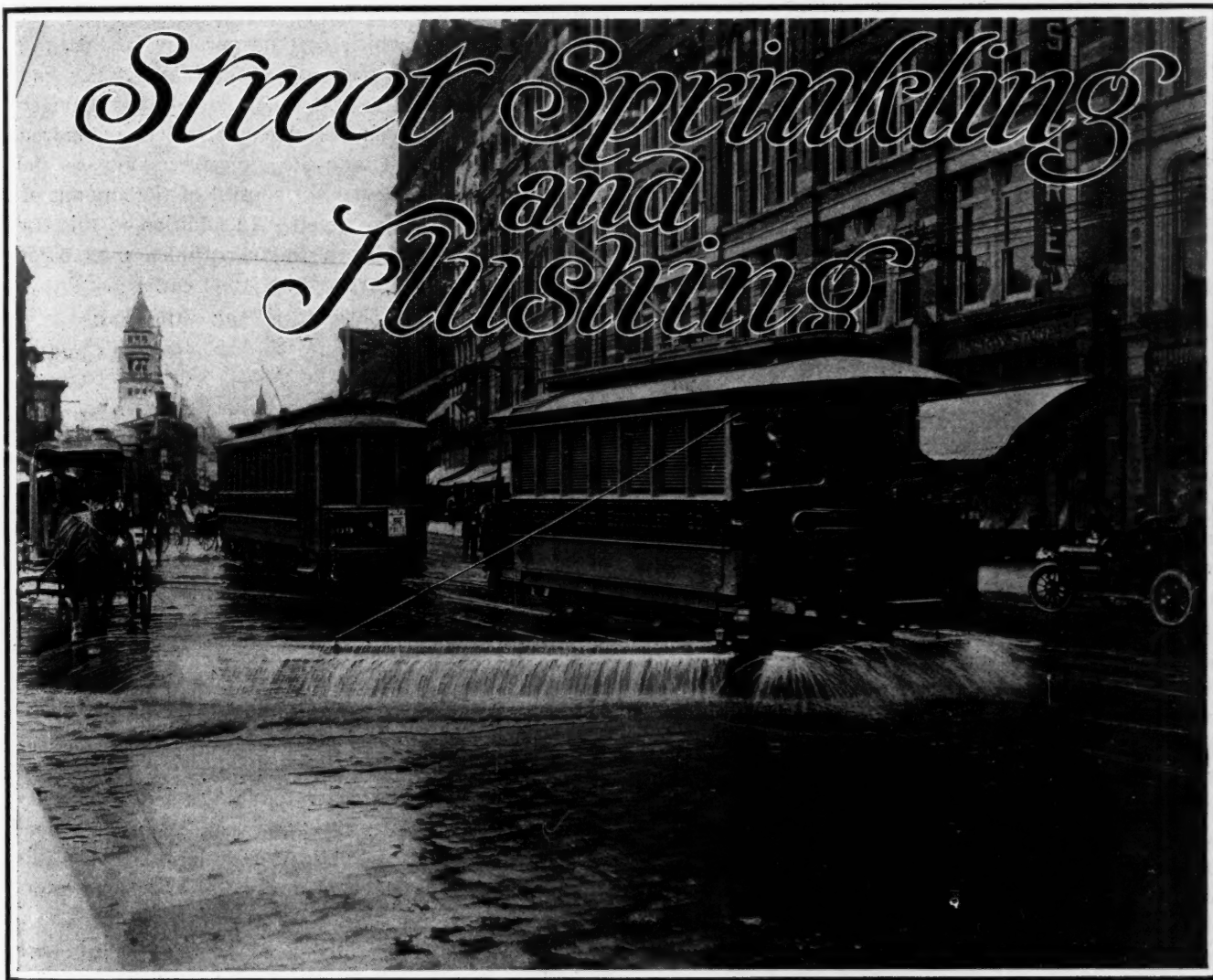
Municipal Journal

And Engineer

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No. 13



CAR SPRINKLER CLEANING STREET BY FLUSHING

IN connection with the data concerning street cleaning methods which we recently collected, and which were published last week, we received so much interesting information concerning street flushing and sprinkling by trolley cars that it seemed desirable to devote a special article to these subjects, which we present herewith.

At least two styles of car sprinklers are referred to as being used; the two first described in the following letters discharging water under pressure, while the New England cars rely on gravity only. The cost of this service in several cities is given in detail.

Flushing, both by machine and by hand, is being practiced more extensively each year. It is somewhat remarkable that, although every known user of these two methods was questioned, the reports, almost with-

out exception, were favorable to both. The replies to our inquiries were as follows:

STREET SPRINKLING BY CARS

On July 23, 1906, Grand Rapids, Mich., contracted with the Grand Rapids Railway Company for sprinkling the streets over which the street railway company operates. This is done through sprinkling cars. We pay the street railway company 12 cents per linear mile of street, regardless of the width of the street. The city furnishes the water free of charge to the railway company, and the railway company is to thoroughly sprinkle the streets from curb to curb.

The equipment consists of two electrically-driven, hydraulic compression, steel tank cars; one of 2,800-gallon and one of 4,200-gallon capacity.

Following are the data covering last summer's service:

Number of miles sprinkled, 11,771.92 @ 12c. per mile..\$1,412.63
Gallons of water used, 29,121,400 @ 4c. per 1,000
gallons 1,164.84

Total\$2,577.47
Cost of sprinkling per mile under contract with Street
Railway Company..... 0.12
Cost of water per mile shown above......0989

Total cost per mile......2189
Gallons of water used per mile..... 2,474

We also operate thirty-two 750-gallon municipal sprinkling carts distributed in the various wards of the city. It is the intent of this department to sprinkle all improved streets at least twice a day during the sprinkling season.

We submit the following data covering our municipal sprinkling wagons:

Total number of miles sprinkled..... 21,883,523
Cost, exclusive of water.....\$10,938.40
Gallons of water used, 77,039,512, cost..... 3,707.87

Total cost of ward wagon sprinkling.....\$14,646.27
Average cost of ward wagon sprinkling per mile
for labor and repairs, including team......50
Average cost of sprinkling per mile for water only.. .17

Average total cost per mile......67
Gallons of water used per mile..... 3,521

You will notice that more water is used per mile by the ward wagon system than by the sprinkling car system. This is in favor of the sprinkling wagon. The street car sprinkling has been very satisfactory with one exception, and that is, that the speed of the sprinkling cars is excessive, and therefore not enough water is thrown to thoroughly sprinkle the street. But when the difference in cost is considered, the street railway sprinkling is a great success in this city.

During the past season the cars did much better service than the prior season, and it should be stated further, that as far as paved streets were concerned the street car sprinkling was all that could be desired.

I have studied this situation carefully, and honestly believe the street railway company has been giving practically as good service as it can, considering the fact that it is necessary for the sprinkling cars to keep out of the way of the passenger cars, so as not to cause delays in the passenger traffic; as it can readily be seen that under these conditions it is absolutely necessary at times for the sprinkling cars to speed up somewhat to keep out of the way.

SAMUEL A. FRESHNEY,

Secretary and Gen. Manager, Board of Public Works.

ADDITIONAL DATA FURNISHED BY MR. FRESHNEY

Total miles of improved streets in Grand Rapids....	182
Total mileage of unimproved streets in Grand Rapids.....	112
Total mileage of streets.....	294
Total mileage of streets covered by Ward wagon sprinkling	160
Total mileage of streets covered by sprinkling cars.....	26
Total mileage of streets sprinkled.....	186
Total cost of Ward wagon system for season 1908, covering labor, maintenance, teams, water, etc.....	\$14,646.27
Depreciation figured at 10 per cent. of \$7,800, which is the value of sprinklers and appurtenances.....	780.00
Total cost of Ward wagon sprinkling.....	15,426.27
Total cost of street railway sprinkling.....	2,577.47
Cost of taxpayers on each \$1,000, assessed valuation, Ward wagon sprinkling.....	.1920
Cost to taxpayers on each \$1,000 assessed valuation, Street Railway sprinkling.....	.0322
Total .....	.2242

The city of El Paso, Tex., and the street railway company jointly purchased a large sprinkling car propelled by electricity, costing about \$5,000, each paying one-half of the price. The street car people furnish the electricity and two men to operate the car. The city furnishes the water. We sprinkle eight miles of streets with this car, making four to six trips per day, as necessity may demand. We pay for water at the rate of 12½ cents per thousand gallons, and the average cost of water for this car is about \$250 per month. We consider that this car takes the place of about six wagon sprinklers, which cost us per day in this city about \$2.50 plus the amount of water used. We find it very satisfactory, as the water is distributed under high pressure. It can sprinkle a street one hundred feet wide evenly and with the utmost economy, as the man at the valves has perfect control of the amount of water placed upon the streets. In addition to this car sprinkler, we use thirteen wagon sprinklers on other streets that are not traversed by street cars.

PERCY MCGHEE,

City Clerk.

CAR SPRINKLING IN NEW ENGLAND

The use of car sprinklers for street sprinkling has been adopted more generally in New England than in any other one district, having been used last year in at least seventeen cities. Inquiries addressed to these has brought us a large amount of information and data.

At Danbury, Conn., 5½ miles of street were sprinkled last year by the street railway company, which furnished the car, men, and all necessary equipment. The city paid the company the same rate that other contractors received for cart sprinkling, 5 cents per lineal foot, street intersections not being measured. The car sprinkler used about 120,000 gallons of water per day, covering most of the route four times daily. The city expects to obtain better rates this year. Wm. T. Woodin, Superintendent of Public Works, has charge of this work, and we are indebted to him for the above information.

At Lawrence, Mass., the work is done by car more quickly and more effectually, but at greater cost. City Engineer Arthur D. Marble, states, however, that it is difficult to compare the relative cost of car sprinkling and cart sprinkling because of the difference in efficiency of the work and character of the pavement watered; 6.18 miles of street were watered by the car sprinkler. This used an average of 12,276 gallons per day between April 15th and Oct. 15th, or an average of 11,635 gallons if the time between Oct. 15th and Nov. 16th be included. The average cost per mile between April 15th and Oct. 15th was \$526. The average cost per mile by carts between April 15th and Nov. 1st was \$393 per mile. The car sprinkler cost \$550 per month.

Portland, Maine, began municipal street sprinkling in 1907, under the management and control of the Commissioner of Public Works, Bion Bradbury, Jr. Bids were requested from sprinkling contractors throughout New England, and a contract was awarded to the Portland Street Sprinkling Company which that year

sprinkled upwards of 28 miles of streets, using street cars where possible and teams where there were no street railway tracks. All of the principal thoroughfares, however, contain tracks and Mr. Bradbury states that the sprinkling here is done more evenly and quickly than by carts. The car service he believes to be a little more expensive than the carts, although there is very little difference.

Comparing the present municipal sprinkling with the former practice of private sprinkling, the general opinion of both the public and the officials of Portland is that municipal sprinkling is much more satisfactory. The streets are watered regularly and uniformly, the general cost of the service to the citizens is very much less, and there are many advantages in connection with the sweeping and cleaning of streets because of the control of the sprinkling by the street department.

At Haverhill, Mass., the Highway Department has recently taken charge of this service, and the Council has established a uniform rate for street sprinkling of 4 cents per front foot. This action was taken after correspondence with city engineers of several cities of the State, in every one of which it was found that the watering was in charge of the Street Department, although in a few cases it was let out by contract. The assessments were uniform for all streets in every city, except in Lowell, where the assessment per front foot varies from 4 to 6 cents, depending upon the width of the street. In previous years Haverhill had assessed 3 cents for dirt streets and 4 cents for pavement and macadam, while on about $4\frac{1}{2}$ miles of macadam no assessment was made on the plea that it was necessary to water them twice a day to keep them from raveling. The number of miles of streets watered per cart varied in the different cities from 1.4 to 3 miles. The cost per mile varied from \$236 to \$487.

Data concerning the work done in a number of other cities is contained in the following letters:

NEW BEDFORD, MASS., March 10, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Dear Sir:—Last year the City of New Bedford made a contract with the American Car Sprinkling Co., of Worcester, for the use of one car to sprinkle certain streets within the city from June 15 to October 15, for the sum of \$475 per month. This price included the crew to operate the car. The street railway company furnished the power and trackage without cost. The city installed at convenient intervals nine hydrants, placed in brick vaults, with iron manhole covers, at a total cost of \$1,376.85. About 10 miles of streets with a total area of 156,800 square yards, mostly paved, were covered by the sprinkling car. These streets included about six and two-thirds miles, 24 feet between curbs; about three miles 30 feet between curbs, and about one-third of a mile 40 feet between curbs.

The capacity of the car was 2500 gallons. It was operated on 88 days for 10 hours a day, discharging 2156 loads, or a total of 5,390,000 gallons of water. The city furnished the water without charge. At the manufacturers' rate of 10 cents per 1000 gallons, the value of the water would be \$539. The largest number of loads used in any one day was 39. The average number of loads used per day was 24.5. About 33 loads per day would be a fair allowance for the purpose of ascertaining the daily mileage which the car could cover without undue forcing. The operation of the car on a basis of 33 loads a day would be as follows:

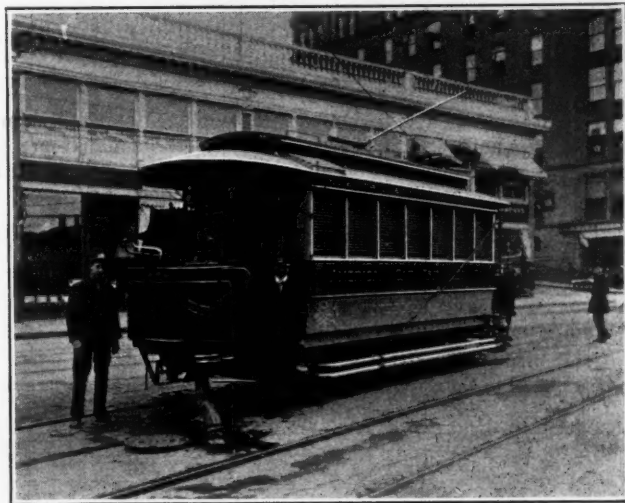
4 trips over $1\frac{1}{2}$ miles of streets = 6 miles
3 trips over $1\frac{1}{2}$ miles of streets = 4.5 miles
2 trips over $6\frac{3}{4}$ miles of streets = 13.5 miles

making a total of 24 miles covered by the car in a period of 10 hours. The cost of the car for the season was \$1,900. This is \$190 per mile of streets watered, or \$21.60 per day of operation, which is equivalent to \$2.16 per mile of street watered per day. About 6000 gallons of water were used per day per mile of street watered.

The city has never undertaken the watering of its streets with carts; therefore we have no data on the cost of that method. Certain streets of the city are watered by a private party, the abutters paying the cost. I should say there is no question but what the sprinkling car is the cheaper method and far more satisfactory. It performs its work rapidly and better than any cart system I have ever seen.

The entire cost of installing hydrants and hiring car was paid by the city. No part of this cost has as yet been assessed upon the abutters, although under the law all or a portion of the cost of sprinkling may be so assessed.

Very truly yours,
WILLIAM F. WILLIAMS, City Engineer.



FILLING SPRINKLER CAR

FALL RIVER, MASS., March 9, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Gentlemen:—Sprinkling of streets by street cars is done here under the direction of the Highway Department. They believe that the sprinkling by street cars is both better and cheaper than by carts. The work here is done by contract, the contractor furnishing and operating the car sprinklers. Last year's contract price for three cars for an average of six and a half months to the car was \$9,262.50. A total of 23.5 miles of streets are covered by cars. In the month of August the three cars covered 3,063.4 miles, carrying 2814 loads of 2500 gallons of water each.

Yours truly,
PHILIP D. BORDEN,
City Engineer.

QUINCY, MASS., March 9, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Dear Sir:—Sprinkling of streets by means of street cars has been done in Quincy for quite a number of years with good success. If the car is handled by a careful operator it can sprinkle much or little, and can do it both better and cheaper than with horses and carts. Last year we sprinkled 10.7 miles by this method, a great deal of it being on wide streets, the cost thereof, from April 15 to October 15, being \$3,300. The amount of water used, of course, varies considerably; the maximum amount per day would be about 120,000 gallons.

Yours respectfully,
RANDOLPH BAINBRIDGE,
Commissioner of Public Works.

WORCESTER, MASS., March 10, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Dear Sir:—Our authorities have found, after several years' use of the sprinkling cars, that they are a necessary part of the street equipment, and have come to recognize this method of street sprinkling as so superior to any other that the cars have become an established part of our municipal direction.

Worcester was the first city in New England to recognize the merits of this device, and began its use in the year 1895, and has at present five cars in use, sprinkling from 30 to 32 miles

of streets daily when the weather conditions require. The sprinklers are graded so that the amount of water delivered is under control, and its distribution is more uniform and perfect than by any other means I have ever observed. No difficulty whatever is encountered in sprinkling the busiest of our thoroughfares, and by the movable arm, which reaches the surface of the street in a manner impossible to the ordinary cart, places the water where it is wanted. The motion of the car is so uniform that the distribution of the water is very nicely done and closely approaches a perfect sprinkle.

The amount of water used is, of course, a variable quantity, due to the condition of the atmosphere, the width and kind of pavement being sprinkled, force of wind, etc., but perhaps in a general way it may be said that about 3000 gallons of water per mile of street are used.

The cost per annum is rated by the width of street sprinkled, and for the ordinary widths of street, per mile, is as follows:

Width.	Cost.
40.....	\$475.20
45.....	501.60
50.....	528.00
55.....	633.60
60.....	792.40

By reason of the use of the cars the entire cost of sprinkling, both by cars and carts, is reduced, so that both an added interest of cheapness in method and also a more perfect sprinkling, in my opinion, are obtained by the use of sprinkler cars.

Very truly yours,

FREDERICK A. McCLURE,
City Engineer.

HOLYOKE, MASS., March 9, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Gentlemen:—The street sprinkling car operated in this city is owned by the American Car Sprinkler Company of Worcester,

the work being done under contract at a cost of \$3,300 a year. The Board considers the car much more efficient than horse carts and cheaper for the territory that it covers. One car covers all of the streets upon which street railway tracks run within the city limits. As to the amount of water used per mile it is impossible for us to say. In an average working day the car, which holds 2250 gallons, will use about 33 full tanks of water.

Yours truly,

OSCAR C. FERRY,
Assist. Clerk, Board of Public Works.

LOWELL, MASS., March 13, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

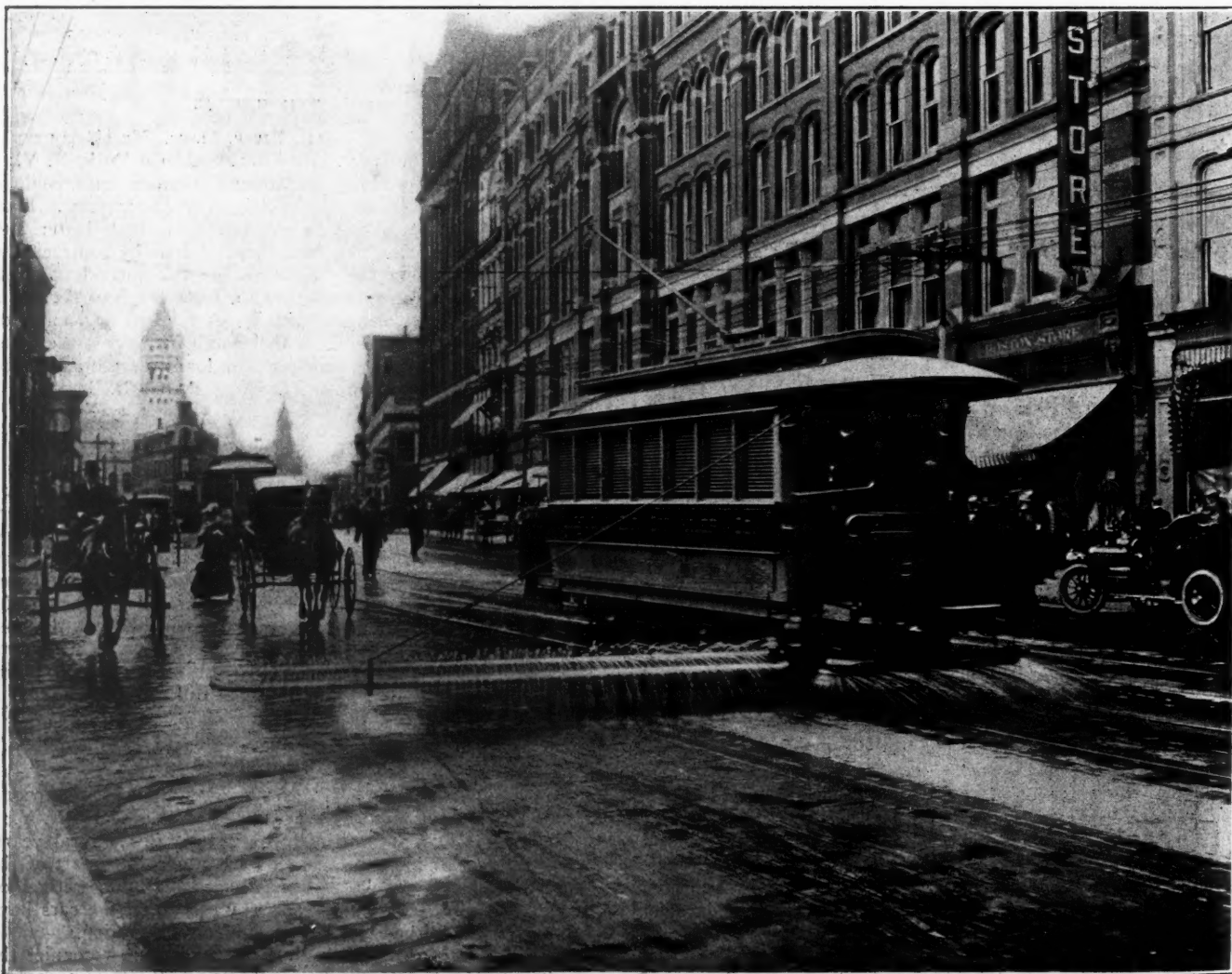
Dear Sir:—We began to sprinkle some of the streets of Lowell by means of street car sprinklers in 1901, and at the present time use two cars and sprinkle about 19 miles of streets. We have a five-year contract with the Car Sprinkler Co. for the cars, which they run, and we pay the street railway company for the power and the Water Department for the water. Last year the cost was \$5,750 for the cars and \$957.50 for the power. About 2000 gallons of water are used per mile and 182,500 gallons per day. The streets are sprinkled at least twice a day, and the business portion of the city five or six times a day, according to the weather.

It is a very satisfactory way of sprinkling streets—much better and cheaper than with ordinary carts, but it would be an improvement to have three cars, so as to sprinkle the macadamized streets oftener and not so much at one time.

To get the very best results in keeping streets clean the paved streets should be patrolled and swept by hand, and then sprinkled by a car sprinkler; this would do away with the very fine dust that cannot be removed by sweeping.

Yours truly,

GEORGE BOWERS,
City Engineer.



ORDINARY SPRINKLING BY STREET CAR

SPRINGFIELD, MASS., March 15, 1909.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

Dear Sir:—In 1906 we made a contract with the American Car Sprinkler Co. of Worcester, Mass., for a period of five years for the use of three sprinkling cars from May 1 to September 30, and two cars for the balance of the spring and fall months; the streets to be watered daily, Sundays included, a length of 21.23 miles of streets from May 1 to September 30, and 13.77 miles for the balance of the season when watering is required. The car sprinkler company furnishes all the necessary equipment and men to operate the same, the city furnishing the water without charge.

Under this contract thirty streets are watered three times daily for the most part, excepting eight streets which are watered from four to five times daily. The contract for watering for the earlier spring and later fall months, covering a length of 13.77 miles, provides also for watering for the most part three times daily, with the same number of exceptions as above mentioned, in which the sprinkling is made four or five times daily.

For the service above mentioned the city pays annually, for a service of two cars from May 1 to October 1, \$6,270, and for a service of a third car between May 1 and September 30, \$2,612. The city has the right to revoke this contract any year during the five-year period, during the month of April, by payment of the sum of \$467.50 per year for the years that have expired prior to the revocation.

We have regarded the method of sprinkling by trolley sprinklers as more satisfactory than the method with the ordinary street sprinkler. In the busier streets the trolley car sprinkler makes less interference with traffic and the work is more expeditiously performed; consequently, ordinary traffic is not interfered with for so long a time.

Very truly yours,

CHARLES M. SLOCUM, City Engineer.

PROVIDENCE, R. I.

Editor MUNICIPAL JOURNAL AND ENGINEER, New York, N. Y.:

The Department of Public Works of Providence, R. I., is under contract with the local traction company for the sprinkling of all macadam streets in which its rails are laid, from April 15 to November 15, at a cost of 15 cents per car mile. How this cost compares with that of sprinkling the streets by horse-drawn carts I am unable to state, as we have never employed the latter method, such work being done entirely by individuals. The average quantity of water used per mile is 1,730 gallons for a 50-foot street; other widths in proportion. Each car will sprinkle from 14 to 21 miles per day, the quantity depending to a great extent upon the running time of the passenger cars on the various routes over which they travel. They make from two to six round trips per day, according to the locality and the necessity for frequent sprinkling.

As to the service rendered by these trolley sprinklers, it is generally satisfactory, although some difficulty has been experienced on account of the force of the streams, within four or five feet of the rails, being so great as to destroy the binding of the pavement; otherwise, no fault can be found.

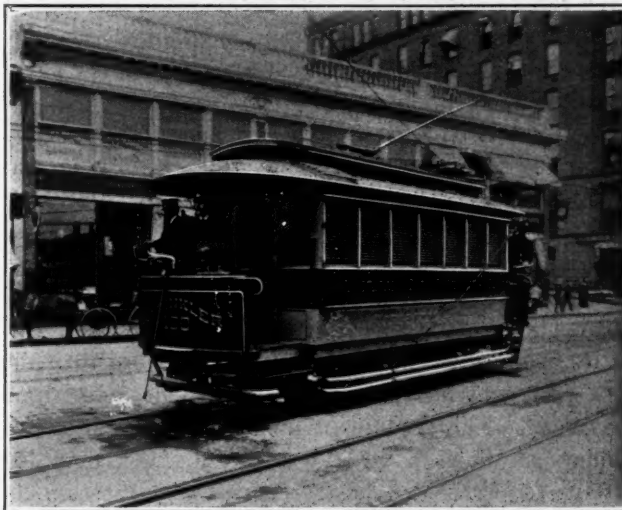
Yours very truly,

WALTER F. SLADE, Commissioner.

In addition to the cities above mentioned, street-car sprinkling has been employed at Lynn, Revere, Salem and Taunton, Mass.; New Britain, New Haven and Waterbury, Conn., and Port Chester and Syracuse, N. Y.

Sprinkling by these car sprinklers is done by gravitation through two swinging arms, one placed on each side of the car, but only one of these being operated at a time, this being the one which would move in the direction of travel. These arms sprinkle the surface from 26 to 30 feet outside of the tracks. The car contains about 2,700 gallons of water, which amount will sprinkle approximately one mile of street; although this is, of course, to a greater or less extent regulated by the kind of paving, whether block, asphalt or macadam. In addition to the arm there is a track sprinkler placed across

the front of the car. The water from both sprinkling arm and track sprinkler can be graduated so that either a fine spray for dust laying or a flush stream may be delivered, as may be desired. As a general rule one car is sufficient for sprinkling thoroughly from 6 to 8 miles of streets.



SPRINKLER RUNNING WHEN NOT IN OPERATION

FLUSHING STREETS BY MACHINE

Cleveland, O., I believe to be far in advance of her sister cities in the system of wet cleaning. To abandon the automatic flushing system would be next to a calamity. It has long passed the experimental stage and is now a necessity. No well regulated city that wants to be clean can afford to ignore the benefits derived from wet cleaning. Of course, contractors that are in the graft line and have been reaping the golden shekels oppose the system and will continue to do so as long as they can hold on to the unsanitary dry or sweeping system.

Our city has 360 miles of hard pavements, of which ten miles is cobblestone, sand filled, which we swept at first, but of late the improvements made by us in the delivery of water to the pavements by our machines has made it possible for us to discontinue all sweeping machines and flush everything.

Our average cost of cleaning for the year 1908 was 49 cents per great square (10,000 sq ft.).

The city has twenty-eight machines and will purchase four more, which will be sufficient to keep the 360 miles of pavements clean and sanitary. We work them in two shifts of eight hours each and our success has been marvelous; we would not be without them.

You can safely say that nothing was ever invented in the street cleaning line that can compare with the automatic system of street flushing.

GUS H. HANNA,

Superintendent.

The city of Syracuse, N. Y., entered into contract with the C. L. Amos Coal Co., they being the lowest bidder, for the services of eight teams to work in two shifts of eight hours each per day, or 1,264 team shifts from May 1 to November 1, 1908, for the sum of \$7.22 per team per shift of eight hours. This represents the

cost for the teams and drivers, including the cost of maintenance of teams and harnesses, etc., and the housing and preservation of four flushing machines from damage, the wages of the foreman of flushing and the hydrant men, and also the use of four flushing machines and other incidental and necessary work.

We cannot compare the cost between the flushing of pavements and sweeping because the flushing was done on asphalt pavements and the sweeping on brick pavements alone.

The total length of asphalt pavements flushed was 24.7 miles. The cost for the use of each flushing machine was \$100. The average cost per foot for flushing three times a week was 3.7 cents per foot; flushing six times per week was 7.4 cents per foot. The wide difference in assessment is accounted for by the following reason—the amount of money raised in 1907 for flushing three times per week was \$2,429.79 more than the work cost, and this amount was credited to the 1908 assessment. The amount of money raised in 1907 for flushing six times a week was \$318.95 less than the work cost, and this amount was added to the assessment for 1908.

The estimated frontage flushed three times per week in the year was 195,045; the estimated frontage flushed six times per week in the year was 64,478.

F. M. WESTCOTT,
Commissioner of Public Works.

With reference to the cost and operation of flush tanks in Knoxville, Tenn., I am not at this time able to give you a detailed statement as to the cost of operating the same for the past year, but will say that the cost of operating said tanks is very much less than our old method of sweeping; and from both sanitary and economical standpoints I would not be without these flush tanks. They have given entire satisfaction in every particular. Yours very respectfully,

JOHN W. FLENNIKEN,
Chairman Board of Public Works.

In Salt Lake City flushers purchased from the Sanitary Street Flushing Machine Company have been used for several years in cleaning the streets. The following data may be of use:

Each flusher has a capacity of 600 gallons, including the air tank (water space 550 gallons, air space 50 gallons). It is operated by one man and team. In one day of eight hours it uses 26,400 gallons of water and flushes clean 40,000 square yards of street pavement using approximately $\frac{2}{3}$ gallon per square yard. Each tank averages 48 loads per day. It is usually necessary to charge with air three times per day. Each flusher will clean a strip approximately 11 1-3 feet wide on each trip, flushing from one side only, and will discharge for approximately $3\frac{3}{4}$ minutes. It takes about the same amount of time to fill the flusher; and stopping, starting, opening valves, etc., consume about $2\frac{1}{2}$ minutes.

The flushers wash pavements perfectly clean, and

the dust nuisance is almost entirely avoided. On moderately wide streets no particular inconvenience is caused to traffic. The objection to this method is the stoppage of cross gutters, caused by the refuse from the street.

The tanks used in this city have an initial discharge pressure of 60 pounds, decreasing to 15 pounds as the water is discharged.

L. C. KELSEY, City Engineer.

Little Rock, Ark., owns a St. Louis flushing machine and operates it with the Street Department force. With a proper nozzle close to the pavement this might be a good thing for brick and perhaps is for asphalt. But with the high water pressure coming on the street as it does I consider it detrimental to pavements. And this is especially true unless the bricks are well grouted. With a poorly grouted street the flusher acts the same as a force nozzle in hydraulic mining operations.

I have recommended the "Kindling" washer rather than the flusher or "digger" which we now have in use.

E. A. KINGSLEY, Superintendent.

FLUSHING STREETS BY FIRE HOSE

Auburn, N. Y., has 6.3 miles of brick, asphalt and bitulithic pavements and all pavements are flushed three times a week, except Genesee street, the main business street, which is flushed six times a week.

The method of flushing is by water taken from fire hydrants, using fire hose supported by small two-wheel trucks about 20 feet apart, drawn by one horse attached to an ordinary one-horse truck; one man operating the nozzle and a man on either side of the street with a push broom sweeping the material along the gutters. Also one man to attend to the hydrants, couple the hose, etc. (Two outfits are employed.)

The work is done by contract and the price therefor for last season, from May 1 to November 1, was \$129.95 per week, averaging about 7 cents per linear foot for the season for the streets that were flushed three times per week, and about 14 cents per linear foot for the street that was flushed six times per week.

We believe flushing to be the cheapest and cleanest method of cleaning streets, but can not give you a comparative cost of sweeping, as that method was abandoned some years ago. We keep men constantly on the paved streets with steel scrapers picking up droppings and refuse, which are drawn off several times each day.

The expense of flushing is a special tax assessed against the property upon the streets that are flushed.

JOHN C. HEALEY, Street Superintendent.

In Scranton, Pa., street flushing has passed its experimental stage, and we now consider it most satisfactory and economical. This method has been employed here for nearly ten years. Work is done at night. Various gangs are employed according to conditions. Each gang consists of six men at \$1.65 per day, and one horse. Four hundred feet of hose are used, carried on

fifty small trucks about 8 feet apart. This avoids abrasion and destruction of hose.

There is no question as to its efficiency if properly directed, and its comparative cost is indicated by the following taken from our last annual report:

Cost per 1,000 sq. yds. by hand method.....	\$0.307
Cost per 1,000 sq. yds. by machine method.....	0.182
Cost per 1,000 sq. yds. by flushing method.....	0.20
This being for labor only.	

C. R. ACKER,
Director, Dept. of Public Works.

Marion, Ohio, depends a good deal upon the farmer's trade, and therefore along the business section of our little city horses are tied from morning till night, which greatly interferes with sweeping and scraping. Recently they have been too slushy for this method of cleaning and we have flushed them with hose. The cost of a typical flushing of a stretch 5,500 feet long and having an average width of 45 feet was as follows:

1 team flusher for 14 hours at 35 cts. per hour.....	\$4.90
1 helper, 14 hours, at 16 cts.....	2.24
1 one-horse team to pick up dirt in gutter, 10 hours at 25 cts.....	2.25
1 helper on same, 10 hours, at 16 cts.....	1.60

Total\$10.99

This includes no charge for water, as we are allowed 2,500,000 gallons for flushing streets and sewers by the terms of the water company's franchise.

Street sweeping can be done for a trifle less, but there is nothing sanitary about it, while flushing cleans them perfectly and leaves no dust behind.

Last summer we tried white wings over the same territory at a cost of about \$55 per week of six days. This gave very satisfactory results, but not so good as flushing.

GEORGE L. BLUM,
Supt. of Streets and Alleys.

TEMPERATURE IN THE SETTING OF CONCRETE

A STUDY of the effect of temperature in the time required for concrete to set was recently made by the Aberthaw Construction Company, of Boston, Mass., with the assistance of Mr. H. L. Sherman, cement chemist, storage at the required temperature being obtained through the courtesy of the Quincy Market Cold Storage Warehouse Company. Neat cement and one-to-three mixtures were kept in temperatures varying from 72 degrees to 41 degrees, and tests were made at the end of seven days, twenty-eight days and three months. In the case of samples kept at 72 degrees, the neat cement showed a decrease in strength from seven to twenty-eight days, but the mortar samples showed no change in strength. In the samples at 41 degrees there was considerable increase between the seven and twenty-eight-day tests in both sand and neat cement; and at 34 degrees a still larger increase in both. In the opinion of the chemist this illustrates the importance of water on the earlier strength of cement. At 72 degrees the excess water contained in the briquettes was evaporated rather quickly, while at the lower temperatures the rate of evaporation was very slow. Between twenty-eight days and three months the briquettes kept at 72 degrees

showed a very good increase, those at 41 degrees a less decided increase, and those at 54 degrees still less. Apparently cement at low temperatures, but still above freezing, attains less strength than at a normal temperature, but the increase in strength for a short time is greater.

POLICE LIFE BOAT IN PROVIDENCE

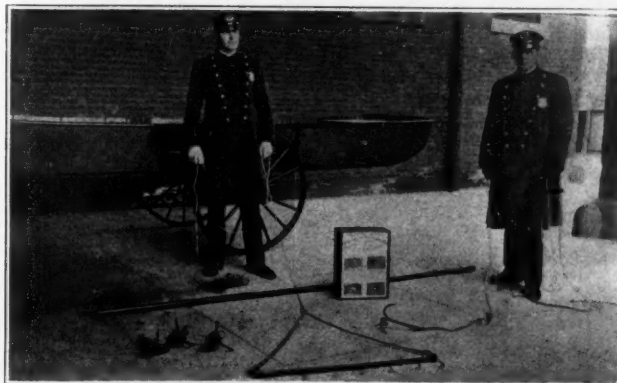
Mounted on a Truck for Easy and Rapid Transportation and Launching—Equipment for First Aid and for Grappling for Bodies—Runners for Dragging Over Ice

THE Seventh Precinct Police Station of Providence, R. I., has recently been equipped with a lifeboat which is fitted upon a two-wheeled truck by which it may be transported to any part of the water front where emergency may call for its use. This idea is credited to Capt. F. A. Matthews of that station, to whom we are indebted for the following description.



LIFE BOAT DRAWN BY PATROL WAGON

The boat is 14 feet 6 inches long and about 7 feet beam at the widest part. It is of scow type, built to give a large amount of bottom surface, which construction adds to its stability when lifting persons, bodies or other objects over the side or grappling for the same. It also facilitates pushing it over ice or partly frozen ponds, or mud flats, and the bottom is provided with three longitudinal wooden strips which serve as runners when it is necessary to drag it over the ice; the equipment including two ice pike poles which can be used either as push poles or as boat hooks. The bottom is constructed in a novel fashion, the bottom boards being dowelled together with strips of copper, forming a lock joint which will not open when dry.



LIFE-SAVING APPARATUS, MEDICINE CHEST, ETC.

The carriage or truck is provided with heavy springs, rollers and clamps, which hold the boat firmly but release it instantly when desired. The connection between the boat and the truck is such that, when a pond is reached, carriage and all can be launched and the wheels dropped when the boat is well afloat. This will save considerable time in launching on flat shores into shallow water. The boat and truck are kept in a shelter in the courtyard of the station. They can be attached to the rear step of the patrol wagon or to an automobile for quick conveyance to the point where needed.

The boat is equipped with a set of grappling hooks, the lines to which are provided with lead weights to insure their acting properly. A handy little grappling made of four cod hooks, and a drag made of gas pipe with ten cod hooks attached are part of the boat's equipment. It also carries a medicine chest provided by the U. S. Volunteer Life Saving Corps. All of these are shown in the accompanying illustration.

The boat was constructed by the Richardson Marine Supply Company, at Pawtuxet. The truck was built and donated by J. G. McIntosh & Son, of Providence.

BURNING SEWAGE SLUDGE

For a considerable period the Metropolitan Water and Sewerage Commission of Massachusetts has followed the practice of compressing into blocks the material screened out from the sewage before it enters the pumps and utilizing it for fuel beneath their boilers. They early learned, however, that the brick work was burned out very rapidly whenever this fuel was used in connection with externally-fired boilers. On the other hand, it was found to have no effect upon the steel plates. As a result internally-fired boilers have been adopted.

In the recent installation made at Deer Island, in accordance with plans by F. W. Dean, of Boston, a number of horizontal return tubular boilers were replaced by those of the internally-fired type. Scotch boilers were adopted, the combustion chambers being made of steel plate with water spaces, and without brickwork except in the bridge walls and around the fire doors. All objectionable effect of the gases from the sludge was thereby avoided. The compactness and convenience of this type of boilers is shown by the fact that they met the requirements where there was insufficient room for vertical boilers, and where the locomotive type could not be used because of lack of space to remove and replace the tubes; while with the Scotch type the tubes could be drawn within the firing space of the boiler house.

CITY BACTERIOLOGICAL LABORATORY

The city of Denver, Col., has recently installed a new bacteriological laboratory at City Hall, which is one of the most complete in the country, and the bacteriologists will have ample room to do all the work necessary. The physicians of the city depend absolutely on the bacteriological work of the department for diphtheria, and they are in hopes this season of doing efficient work in typhoid fever.

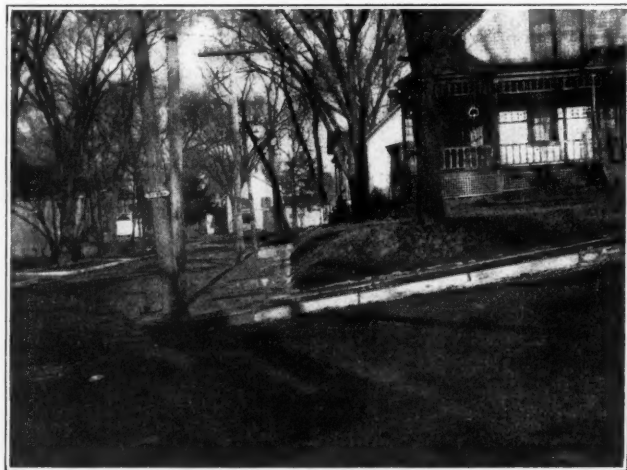
A BITUMINOUS MACADAM PAVEMENT

Laid on Very Steep Streets, Three and a Half Years Ago, and Still in Excellent Condition—Details of Construction—Specifications for Asphalt Used

By CLARK G. ANDERSON, City Engineer, Moline, Ill.

THE pavements herein described were built during the summer of 1905 in Moline, Ill., under the direction and supervision of the writer. They are classed with that type or group of pavements variously designated as bituminous macadam, asphalt macadam, mineral rubber pavement, etc.

Seventeenth street and Ninth avenue are quite narrow residence streets that wind among steep bluffs, so that both gradients and alignments consist of broken lines which are modified at points of intersection by vertical and horizontal curves. The pavement on Seventeenth street is 25 feet wide between faces of curbs; 422 lineal feet is on a 11.55 per cent. grade, 423 lineal feet is on a 9 per cent. grade, and the balance of the pavement is on a 3 per cent. grade or less. The pavement on Ninth avenue is 20 feet wide between faces of curbs; 299 lineal feet is on a 7.3 per cent. grade, 119 lineal feet is on a 10.4 per cent. grade, 331 lineal feet is on a 5 per cent. grade, and the balance of the pavement is on relatively flat grades.



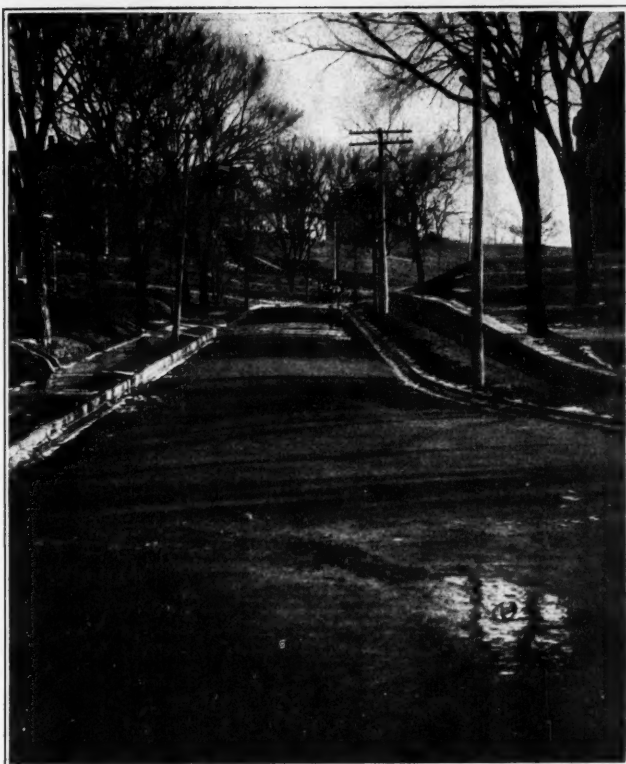
FOOT OF SEVENTEENTH STREET, SHOWING STEEP GRADE

Although the work was contracted for in two separate contracts, due to difference in width of roadway, variations in auxiliary work and other local conditions, they are essentially one job, as Seventeenth street is intersected about midway in its length along this improvement by Ninth avenue. Both improvements were contracted for at the same time, with the same contractor, and the same unit price, \$1.90 per square yard, exclusive of excavation, will apply to either job.

The area of pavement on Seventeenth street is 5,678 square yards and on Ninth avenue 1,726 square yards, or a total of 7,404 square yards.

The concrete curb is 6 inches thick and 8 inches high, with a concrete gutter flag 18 inches wide and 4 inches thick, laid on cinder foundation, and presents no features unusual to this well-known type.

The concrete foundation for the pavement is 5 inches thick, of 1:3:6 mixture, consisting of Portland cement,



SEVENTEENTH STREET, GRADE 11.55 PER CENT. ICE IN GUTTERS
AND AT X

river sand and crushed limestone. The concrete was mixed quite wet, so that, after the surface had been brought to the proper contour by careful tamping, it was possible to tamp into the concrete limestone spalls about 2 inches in diameter which had been spread uniformly over the surface in such a manner as to leave the stones from 6 to 12 inches apart. These spalls were tamped into the concrete until they projected out from the surface of the foundation about $\frac{1}{2}$ inch, the purpose being to prevent creeping of the wearing surface.

Directly upon this foundation was laid the wearing surface, to a thickness of 2 inches after compression, without any paint coat or binder between it and the foundation.

The wearing surface consists of a good quality of crushed granite ranging in five sizes, from dust to elements of 1 inch diameter, so proportioned as to reduce the voids to a minimum, and bonded together with an asphaltic cement sufficient in quantity to fill the voids and an additional very slight excess. The original specifications required an additional size of stone, $1\frac{1}{2}$ inches in diameter, but it was found by experiment to be impracticable to use this size, as the desired degree of smoothness and uniformity in the finished surface could not be attained.

The granite was delivered at the mixing plant screened to the proper sizes, rightly proportioned, passed through the heater and mixer, and the required amount of asphaltic cement added, by the same process and the same appliances used in standard asphalt pavements.

The material was delivered hot on the street, raked out to the required contour and rolled by the methods customary in building asphalt pavements. The roller used was a 15-ton three-wheel roller. After compression the roadway presented a uniform surface, showing minor irregularities and depressions.

The surface was then flooded with clear hot asphaltic cement, which was thinned down to a skin coat by squeegees and immediately covered with granite screenings of $\frac{1}{8}$ to $\frac{1}{4}$ inch diameter to a thickness of $\frac{1}{4}$ inch and then thoroughly rolled with a 10-ton tandem roller. This operation filled all surface interstices, left the surface uniformly smooth, with the granite screenings firmly adhering thereto, and completed the work.

Observations made at the mixing plant developed the fact that the voids in the granite aggregate ranged from 8 per cent to 12 per cent., and that the percentage of asphaltic cement required and used had the same range.

The asphalt used was a California asphalt fluxed with a California oil. The asphalt developed the following properties upon analysis:

Loss at 212° F. (one hour).....	.3%
Mineral Matter .....	.1%
Petrolene (soluble in petroleum ether).....	77.6%
Asphaltene (soluble in bisulphide of carbon).....	22.0%
Carbon, Etc.	None.

100.0%

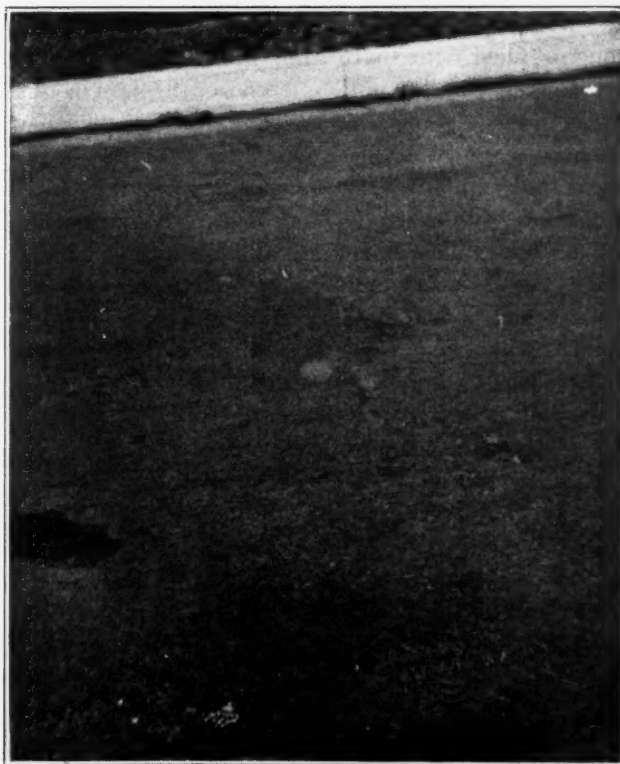
Soluble in Tetrachloride of Carbon..... 99.6%

Flash Point..... 473° F.

Specific Gravity

1034

This pavement has been down four years, subjected to the rigorous changes in climatic conditions experienced in this locality, and has given complete satisfaction. At two points on the steep grades the wearing surface has buckled slightly without cracking, but aside from this the pavement has developed no imperfections. The surface appears to be intact, without evidence of wear due to traffic, or of erosion due to considerable surface water. The foothold afforded horses is good, and these streets appear more popular with teamsters than an adjoining street on flatter grades constructed of another material. So far as can now be determined the pavement is serviceable and durable.



PAVEMENT SHOWING SCREENINGS, $3\frac{1}{2}$ YEARS AFTER CONSTRUCTION
LIGHT TRAVEL

BITUMINOUS MACADAM PAVEMENTS

Different Methods of Constructing These Described in Detail— Bitumen-Surfaced Concrete—Broken Stone Foundation with Surface of Bitumen and Screenings

SEVERAL descriptions or specifications of methods of combining stone and bituminous binder in paving have reached us recently and a comparison of them is interesting as showing differences in methods of treatment which are recommended by parties approaching the subject from slightly different positions.

One of these describes such a pavement as follows: The pavement is to consist of 6 inches of concrete mixed 1 part Portland cement, 3 parts torpedo sand and 4 parts crushed stone or crushed gravel. When all the moisture is evaporated from this foundation, the entire surface is to be coated with bitumen. Then imbed in this $\frac{1}{2}$ -inch of crushed stone evenly spread so as to secure a uniform thickness of $\frac{5}{8}$ -inch. Then flood this with bitumen and cover the same with crushed stone screenings—a sufficient coat to absorb all the liquid in the bitumen. The whole is then to be thoroughly rolled. After this the surface is to be subjected to a heat of 400 degrees F., and a coating of Portland cement and fine granite screenings applied for the purpose of absorbing all the surplus bitumen. The pavement has then to be given a final rolling. It is claimed that this will have the strength of a concrete pavement; but that the loose, bitumen-bound material is so thin that it will not become soft and yielding in hot weather, but there will be sufficient elasticity to do away with the rigidity of the concrete.

A more common method is one in which the lower course consists of stone between $2\frac{1}{2}$ and $1\frac{1}{4}$ inches in diameter spread to a depth of 5 inches; this course being thoroughly filled with sharp sand, gravel, screenings or similar filler and rolled until smooth and firm. On this is spread crushed stone from $1\frac{3}{4}$ to $\frac{3}{4}$ -inch in diameter sufficient to give a finished depth of 2 inches. This course is thoroughly rolled and bonded, water being used if necessary. When it has thoroughly dried out not less than one gallon nor more than $1\frac{1}{4}$ gallons per square yard of tarvia is heated to a temperature between 250 and 300 degrees F. and spread evenly over the surface. This course is then rolled thoroughly, and $\frac{1}{2}$ -inch crushed stone without dust is swept over the surface, filling the voids but leaving no excess, after which the road is again rolled. Then from $\frac{1}{2}$ to $\frac{3}{4}$ gallons per square yard of heated tarvia is spread over the surface and covered with $\frac{1}{2}$ -inch crushed stone, after which the road is rolled until compacted. A sufficient amount of $\frac{1}{2}$ -inch stone or screenings is left on the surface to protect the road while it is "setting up."

The third method, developed on certain county roads of New Jersey, is as follows: The first layer consists of stone not more than 3 inches in diameter spread to a uniform depth of 4 inches and rolled until solid and firmly bound together. Upon this is spread a binder course consisting of stone screenings, clean gravel or a

mixture of one-half screenings and clay to a depth of 2 inches, which is rolled until it will not give under the weight of the roller, the same being sprinkled during the rolling if this will assist in its consolidation. On this, 4 inches of stone not exceeding $1\frac{1}{2}$ inches in diameter is spread and rolled, followed by a layer of stone screenings, clean gravel or sharp sand sufficient in quantity to fill practically 50 per cent of the voids, after which this course is rolled until the fine material has been shaken down to the bottom of this course. Upon this a heavy liquid asphalt binder is applied hot and distributed evenly over the surface at a uniform rate of 1.3 gallons per square yard where trap rock is used or 1.5 gallons where limestone is used. Five to ten hours later a surface coat, consisting of 50 per cent dust screenings and 50 per cent $\frac{1}{2}$ -inch stone, thoroughly mixed, is spread and the road is again thoroughly rolled. A light coat of screenings is spread over the surface to take up any excess of the asphalt which may be brought to the surface by rolling. The material used for this purpose last year was furnished by the Indian Refining Company and contained 82 per cent of asphalt.



ROAD IN NEW JERSEY PAVED BY THIRD METHOD

The City Engineer of Knoxville, Tenn., S. D., Newton, has prepared specifications for a tar macadam pavement which he estimates can be laid for 75 cents a square yard, and will be especially applicable for streets which are not subjected to very heavy travel.

The specifications referred to provide that on a thoroughly rolled sub-grade a layer of 2-inch to 3-inch stone be spread at least 6 inches thick and rolled, no water being used. On this from 4 to 5 inches of 1-inch to 2-inch stone is to be spread and rolled dry. On this the tar is to be applied, a warm, dry day being selected for this, and the surface of the street being perfectly dry and dustless. The tar is to be heated between 250 and 300 degrees F. and evenly spread at the rate of $1\frac{1}{2}$ gallons per square yard of pavement. Before this has cooled there is to be spread on it a top dressing of limestone, less than $\frac{1}{2}$ inch in diameter, sufficient in quantity to fill the voids. The surface will then be thoroughly rolled, and, after 24 hours, opened to traffic. The tar used must be distilled at a comparatively low temperature, have a specific gravity between 1.17 and 1.20, contain no water or ammonia liquors, and also boil at a temperature below 230 degrees F. Upon distillation at 518 degrees F., at least 50 per cent by volume of pitch should remain.

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MARCH 31, 1909.

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Street Sprinkling and Cleaning Devices

LABOR SAVING devices seem to have been adopted slowly in the field of street maintenance until within the past few years; but they are now multiplying rapidly. As in other classes of work and industry, the adoption of efficient appliances by street departments will undoubtedly be found to promote both excellence and economy of service. In this issue the success of sprinkling by street railway cars is testified to by officials of a number of cities, and those of others express their hearty approval of the use of special carts for

flushing streets. The interesting descriptions of their experiences should at least cause officials of other cities to give these methods serious consideration.

Street cleaning by other methods also is receiving—and needs—the attention of inventors. The old broom, shovel and cart method, when employed on a windy day, is too often an intolerable nuisance. We hope to be able to present next week interesting facts concerning some of the latest developments along this line.

Limited and Indeterminate Franchises

THERE are probably few unbiased city officials or students of city affairs at the present time who would advocate the granting of perpetual franchises. As a substitute for this, a number of states are requiring and probably a majority of cities are granting, limited-term franchises. Concerning the former, Milo R. Maltbie, Public Service Commissioner of the First District of New York, argues that "the streets of a city are not the property of a single generation which it has the right to barter or give away without limit. A franchise is justifiable only for so long a time as it inures to the public benefit, and every generation and age should have the power, so far as possible, to work out its own destiny unhindered by limitations unwisely imposed by previous generations."

Concerning the limited-term franchise, he offers the objections that public utilities are deterred thereby from developing in an orderly and continuous way, inasmuch as it is impossible to foresee, in fixing the term of any franchise, just when the community will demand a change in the facilities proposed to be afforded under it; that as the date for the expiration of the franchise approaches the corporation is tempted to go into politics to secure a renewal of its rights, and may, for years before, be seeking the election of city officials who will consider its claim with favor when the time comes; that the company will allow its plant to run down as the end of its franchise term approaches, provided the plant goes to the municipality without payment, and will neglect the fulfillment of its obligations to the city, such as the removal of snow and ice from its tracks. Moreover, it is usually impossible for the city to obtain the construction of extensions or the adoption of improvements as the end of the term approaches; the conditions as to rates and service laid down at the time the franchise is granted may demand modification before its expiration, and the limited-term franchise subjects the business community to periodic disturbances.

As a substitute for either of these he recommends the indeterminate franchise, which he defines as a tenure of rights granted during good behavior, or a franchise which may be terminated by the proper authorities at any time upon payment of a fair valuation for the property taken over, exclusive of franchise. He believes that under this plan a community can always and continuously control its own destinies and direct its own growth. The service and development of the system may be steady and continuous, yet always subject to public control. The plan gives the company an incen-

tive to keep up its service so that its franchise may be continued, and at the same time to maintain its equipment in good shape, so that if for any reason it has to sell out to the city it may claim a fair price for its property. Also he claims that the charges for the support of the property will be lower, since there will be no need to maintain a sinking fund, the purchase of the property by the city being a substitute for this. "The grant should be subject to termination on purchase of the property, either by the city or by another company specially authorized by the city, at a fair valuation. As some time may be required for a new enterprise to get under way and show what can be done there ordinarily should be an initial period during which purchase may be made only on payment of a prescribed bonus in addition to the actual value of the property taken, and possibly a very short period in which purchase may not take place at all, if the scheme is a big one."

Mr. Maltbie believes that continuous control and supervision by a state or city authority should be provided for. Such authority should so regulate the public utility that it will render the best possible service at the lowest rates that will permit a fair profit. There will be no occasion for a money payment to the city as compensation for the franchise, for he believes that ordinarily rates should be lowered instead of taxing the users of a service to defray the expenses of government.

SYSTEMS OF ASSESSMENTS

Plan Proposed for Easton, Pa.—Values and Rentals Combined in Figuring Assessments—Methods Employed in Other States

COUNCILMAN RICE, of Easton, Pa., has recently advocated a plan for assessing property which has not only met a favorable reception in his own city, but which has received favorable comment from other cities as well. This plan is as follows: Appraise the land at full value per foot front, making due allowance for depth, according to a fixed schedule. Add to this one-half the value of the improvement. This gives one result on which to make the assessment. Also multiply the gross rents in various sections of the city by the following units: Residences in residence sections by eight units, business properties in residence sections by nine units, residences in business sections by eleven units, and business properties in business sections by twelve units. This would give another result on which to base the assessment. Compare both results and take the higher result for the assessment, provided it is not more than 20 per cent in excess of the lower; but in no case should the assessment be less than the land value. In making up this scheme it was considered that the property owner in the business section would be satisfied with a smaller per cent on his investment annually than one in the residential or outlying sections.

A great many cities were communicated with in connection with the study of the subject of assessments and several interesting replies received. One writer sug-

gests as an objection to the Easton plan that one property owner is able to rent his building to a better advantage than another; but in the majority of cases the plan was commended. From Beatrice, Neb., it was reported that the counties of that state elect assessors for a term of four years. The first year an appraisement of all real estate must be made on the basis of its cash value, which appraisement remains during the four years, except that allowance is made for new buildings and other improvements as these are erected. The writer believed that an assessor in that state who did the work allotted to him according to law and his oath, would have to change his residence immediately after making an assessment. He recommended a method which he believes is one employed in Switzerland, in which each person is required to list his own property, with the knowledge that the state is privileged to purchase it at 10 per cent over his valuation. Lexington, Ky., reports that an annual assessment of personalty and a quadrennial assessment of realty is made by the assessor at a fair cash valuation, subject to revision by the Board of Equalization. Spokane, Wash., reports the property assessed at 60 per cent of its valuation; the work of the assessors being reviewed and revised by a Board of Equalization. In Philadelphia, the actual market value is the nominal basis of assessment; the assessors keeping a list of all sales and being thus enabled to obtain a very good idea of the market values. In practice it is customary to allow a small deduction of about 10 per cent from full values. Vacant lots are assessed at full value. Mayor Davison, of San Jose, Cal., advocates assessing all vacant lots at full value, saying that many rich estates are holding those in the business section of the city waiting for land values to be increased by the progressiveness of others. Topeka, Kan., works under a state law requiring all property to be assessed at full value. In Butte, Mont., assessments are made by county assessors under a state law at about 50 per cent. of real values. An effort is being made to so alter the laws that assessments shall be made by local officers. In Sacramento, Cal., properties are assessed on a basis of about 60 per cent, the value of the lot and that of the improvements being computed separately. In Wichita, Kan., both real and personal property is assessed at full value and the results are reported satisfactory. However, Mayor Graham favors an amendment enabling Kansas cities to sell any property at assessed value if the owner is dissatisfied at his assessment. Helena, Mont., reports that the real value of property in that city is about \$30,000,000, but it is assessed at \$11,650,000. She is seeking a better system. City Clerk Baker, of Sedalia, Mo., writes that "the taxation question is worrying all of Missouri;" that there is no uniformity of assessment and a remedy is hoped for from the present Legislature. Springfield, Mass., reports no trouble in assessing at their full value both improved and unimproved properties. In Minnesota the state law requires that property be assessed at full value. Duluth reports the work as being badly neglected and the results as very unsatisfactory.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

To Repair Walks at Once

Geneva, N. Y.—Owing to the numerous complaints that have been coming to the Board of Public Works concerning the condition of walks, it was decided to change the ordinance that gives the property owner thirty days in which to repair his walk. The Superintendent was instructed to confer with the City Attorney, with a view of drafting an ordinance empowering the city to do the work forthwith in case the owner refuses to perform the work when notified.

Will Print New City Map

Memphis, Tenn.—The Engineering Department of the city recently prepared a map, showing in detail the style of paving on every street in the city, the sewer lines and various topographical features of value to every taxpayer and property owner as well as to the engineering department. Plates are being prepared by one of the local engraving companies and the map is to be printed in colors. A different color is used for each style of paving, one for asphalt, one for brick, one for rolled gravel, another for stone. The color decided on for the unimproved dirt streets is not stated, but it will probably be a dirty yellowish red, to represent the mud to be found on them in rainy weather.

Paving Ordinance Amendments

Troy, N. Y.—Amendments to the general paving ordinance have been adopted. They include a clause providing for "bituminous concrete" among the materials to be used, instead of "bitulithic," which was explained by Alderman Owen to be a patented name. Provision is also made for "cement concrete paving," and for the relaying of granite blocks on a concrete foundation.

Queensboro Bridge Opened

New York, N. Y.—The promenade and roadways of the Queensboro or Blackwell's Island bridge, were thrown open March 30 by Mayor George B. McClellan and other city officials. The new structure, the third across the East river between New York and Long Island, cost \$20,000,000 and extends from Fifty-ninth street, Manhattan, across Blackwell's Island. The other structures in use are the Brooklyn and the Williamsburg bridges. The Queensboro bridge is 3,724 feet 6 inches long. Its west span, from Blackwell's Island to Fifty-ninth street, is the third longest bridge span in the world, being 1,182 feet in length. The clear height of the structure above the water of the East river is 135 feet, and it is 86 feet wide. It will be equipped with elevated and trolley tracks and will relieve the congestion of traffic on the other bridges by drawing heavily upon the travel between the district just below Central Park and Brooklyn.

Sawdust Roads in Florida

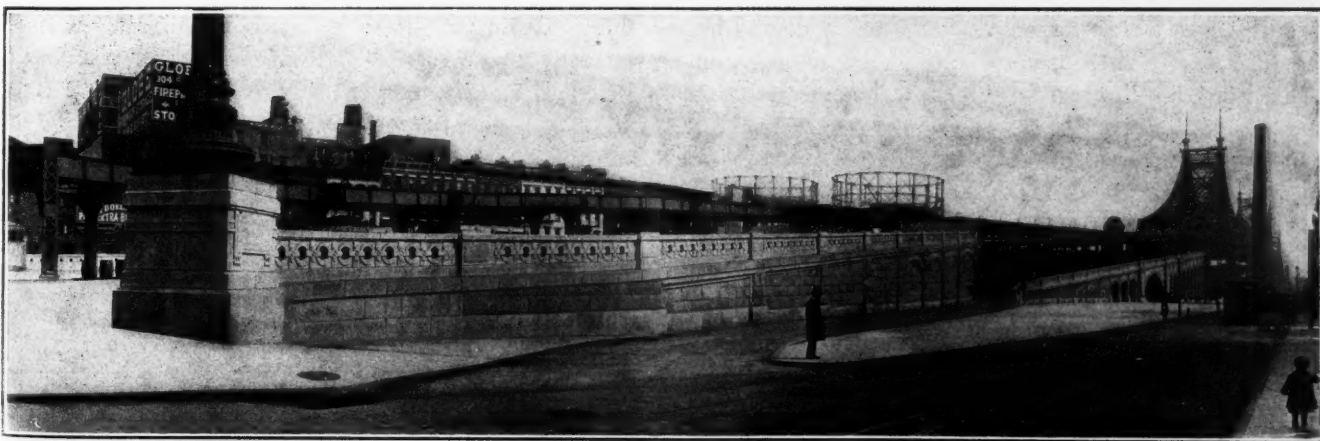
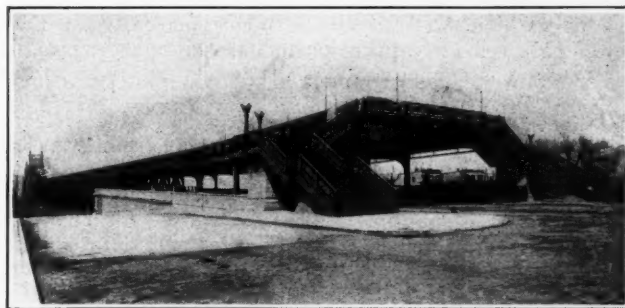
Jacksonville, Fla.—Roads of sawdust, mixed with earth, are being made in Leon county. Two ridges of earth are thrown up with a road machine at the required width from each other, and the space between is filled in with a 6-inch bed of sawdust. This is followed with a smaller machine, which ploughs up and mixes the earth with the sawdust. This makes a roadbed on which the tires of heavily loaded vehicles make no impression. The contractor, G. H. Averitt, has kept an accurate account of expenses in connection with this section of sawdust and earth road, and says the cost aggregates \$297 a mile, showing it to be about the cheapest road material in use. The statement is made that one or two such roads were constructed in a South Georgia county 20 years ago and are still in good condition. Leon county has a clay soil.

Better Streets Wanted in Portland, Ore.

Portland, Ore.—Mayor Harry Lane has decided to investigate the conduct of the various street inspectors on the ground that they are not giving the city efficient service. Many city officials are of the opinion that the reason why better men are not obtained is that the compensation is not commensurate with the services required. The records of the civil service commission seem to bear this out, as only 35 per cent of the applicants succeed in passing the examination. Inspectors receive \$3 per day for actual time worked, although they have to pass on the work done by foremen receiving from \$4.50 to \$5.50 per day from the contractors who employ them.

Bad Streets May Lose Industry

York, Pa.—The new Heany Lamp Company, which recently announced that it would build a big plant at York, for the manufacture of the Heany tungsten filament electric lamps, will not do so unless the almost impassable condition of streets in the East End, where it has already secured a building site, is remedied.



NEW \$20,000,000 QUEENSBORO BRIDGE, NEW YORK CITY, MANHATTAN ENTRANCE; LONG ISLAND ENTRANCE ABOVE
Courtesy of the Brooklyn Daily Eagle

SEWERAGE AND SANITATION

Canal Dogs Must Be Muzzled

Ancon, Canal Zone.—The Chief Sanitary Officer has issued an order making it unlawful for unmuzzled dogs to be allowed at large until further notice.

Stringent Regulations to Prevent Scarletina Epidemic

New Orleans, La.—Alarmed at the frightful spread of scarlatina among the school children and others of New Orleans, which has necessitated the temporary closing of at least twenty schools during the past three months, the City Board of Health has adopted stringent measures for the suppression of the disease. Neglect of parents and physicians to report cases immediately was attributed as the cause for the present condition. Unless a marked improvement is shown in the situation, public and private educational institutions may be shut down for a period of forty days from now on whenever the illness appears among their pupils. In the future, doctors must give notice at once not only of positive cases which they have diagnosed, but cases which appear in the least suspicious. The milk supply to infected premises is to be strictly regulated, and laundry from such homes must not be given out until immersed in a germ-destroying solution. An additional medical inspector is to be engaged, and all recovered patients must undergo examination before being readmitted to schools.

Disposal System Not Necessary for New York City

New York, N. Y.—Horace Loomis, Chief Engineer of Sewers of the Borough of Manhattan, does not believe that the harbor is polluted sufficiently to warrant the introduction of sewage disposal plants by the city. He has expressed this opinion in a letter to Edward Hatch, Jr., acknowledging the receipt of the plans for water-front disposal plants, prepared by a prominent engineering firm, in accordance with Mr. Hatch's suggestions, and submitted by the Mayor to Mr. Loomis. The Chief Engineer says that he does not entirely agree with Mr. Hatch in his statement to the Mayor that the conditions along the water front are intolerable. The discharge of sewage, he says, "is at the outer end of piers some 600 or 800 feet from the bulkhead line in deep water and swift currents, where it is speedily assimilated and digested," and he quotes passages from the 1905 report of the New York Bay Pollution Commission to show that the waters of the bay "in general are not so polluted as to be offensive to the senses, though such is the case with its estuaries and smaller bays."

Residents Oppose Second Assessment

Indianapolis, Ind.—Residents of Sherman Drive and vicinity are pointing to a part of the original Sherman Drive sewer that remains above ground at the approach to the subway as a monument to \$1,000 they had to pay and which they declare was mostly wasted. The original sewer ran to the south side of the right-of-way of the Pennsylvania railroad tracks. Last year the Board of Public Works took up the question of the subway under the railroad tracks and found part of the old sewer would be above the level of the subway. At the same time the board decided to extend the sewer to Pleasant run. In building the extension three hundred feet of the old sewer was torn up, and property owners being assessed a second time for a sewer in the same place. An order has been granted in the Circuit Court restraining the city, County Treasurer and R. F. Pickens, the contractor, from collecting the assessments on the extension.



Would Clean Sewers Per Cubic Yard Excavated Material

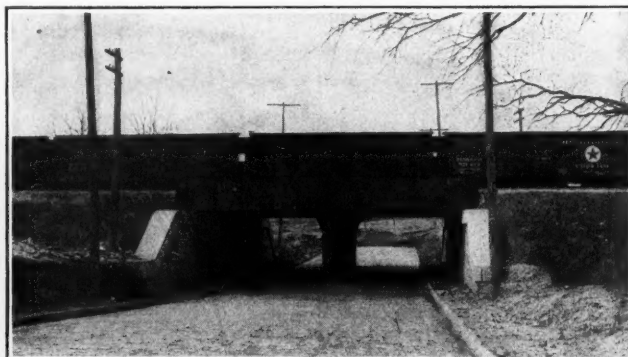
Paterson, N. J.—A representative of the Stewart Sewer Cleaning Company, which desires to sell one of its machines to the city, offered to give a thorough demonstration of the value of his machine. His proposition was that Street Commissioner Brett clean a section of a sewer, the dirt taken out to be measured and an estimate secured as to how much it costs to take it out per cubic yard. As soon as this figure was secured he offered to clean up the remainder of the sewer at a price per cubic yard for dirt removed that it was 40 per cent less than it had cost the city to do the work. His proposition was adopted and the test should either prove the economy of the machine for this kind of work or prove that the old-fashioned way of doing it is the best and cheapest.

New Sewage Plant for Salem

Salem, N. J.—Believing that the sewage from this city is liable to contaminate the oysters on the beds at Maurice River Cove, and that it is also detrimental to the fishing interests, the State Board of Health has notified Salem City Council that a sewage disposal plant must be erected and completed by the year 1913. Two years ago the City Council received a similar notice, but it was explained to the State authorities that the oyster beds are ten miles from this city, and too far for the sewage to cause any contamination. The State Board has since made a more thorough investigation and thinks differently.

Sewage Problem Serious in York

York, Pa.—At the time of the more recent election, a few weeks ago, it was strongly intimated that the State would prohibit the existing method of dumping city sewage into the Codorus Creek if action to complete the sanitary sewage system should not be taken. The city now faces the prospect of having the State Health Commission enforce this prohibition at any time, and its dilemma is a serious one. The great obstacle to procuring the consent of the people to another loan is the fact that the original loan of \$400,000 was to have completed the system. The fact that the sum did not go half far enough brought bitter denunciation upon the administration, under which the system was projected, and examination of the accounts showed that errors of judgment and unexpected additions to the work were responsible for the increased expenditure. Codorus Creek, into which much of the city's sewage now drains, is not capable of carrying all the filth away, and there is constant danger of contagion. The State health authorities have estimated that the body of water in the creek would be sufficient to take off the sewage for a population of not more than 15,000 people with safety, and it is only upon a special permit from Dr. Dixon, the State Health Commissioner, that the private sewers are permitted to empty there temporarily. From the beautiful stream that it was years ago, the Codorus, through its use as nothing more than a great sewer, has come to be an eyesore. At times of low water in summer the stench is so great that people hurry across the bridges, and few boats venture upon the stream. The beautifying of this creek has been one of the things looked forward to with the completion of the sanitary sewage system, whereby the sewage would be disposed of by filtration.



SEWER ABOVE GROUND, INDIANAPOLIS, IND.; ALSO SUBWAY AT RAILROAD, SHOWING SEWER AT END OF STREET

Courtesy of the Indianapolis News

WATER SUPPLY**Economizing in City Water**

Columbus, O.—The customers of the purified city water are finding a new way to reduce their bills. Having stopped up all leaks, they are beginning to see that they can get along with less water. According to the report of W. W. Jackson, in charge of the filtration plant, the announcement has been made that 1,000,000 gallons less was used daily during the first week in March. During the winter months an average of 13,000,000 was used daily, but during this month only about 12,000,000 has been used. This is the low record for the daily consumption of city water.

City Sells Water to Two Other Cities

Newport, Ky.—The Commissioners of Water Works have approved the contract with the Union Light, Heat and Power Company to purchase from the city of Newport water to furnish the cities of Bellevue and Dayton, the Union Company having the franchise at present to furnish these two cities with water. The contract calls for a rate of 8 cents per 1,000 gallons when 80,000,000 gallons or more are used, and 10 cents if less than that amount is used. The Union Company agrees not to furnish any resident of the city of Newport for a term of 20 years.

Newburg to Have Catskill Water

Newburg, N. Y.—A bill has been introduced in the Legislature to permit Newburg to draw water from New York City's aqueduct which in its course from the Catskill Mountains to Storm King will pass close to Washington lake southwest of the city. Newburg is to make the connection at its own expense and the amount to be paid for water is to be either agreed on by the board of estimate and apportionment of New York City and the authorities of Newburg or is to be determined by the Supreme Court.

City Loses Much By Water Bureau Methods

New York, N. Y.—The Bureau of Municipal Research has made a report of its investigations of the administration of the water revenues of New York. It finds that the system of determining frontage-rate charges was such as to hold out a continual inducement to inspectors to make terms with water users; also that it is possible for clerks, without detection, to make arbitrary reductions on bills presented. Many plumbing bills paid by the city for private persons have been allowed to go for years uncollected. The report gives examples of the result of neglect or collusion that the investigation uncovered. Water meters have been found so covered with dirt that it was impossible to tell in what condition they were, while others were entirely inaccessible. Bills for these impaired meters are rendered on a basis of the average consumption shown after the meter had been reset. During the last two years, bills amounting to \$1,800,000, made out on this basis, have been compromised for \$900,000. In the three years, 1906-7 and 8, there has been an increase of \$700,000 a year in the city's water revenues, due partly to growth in population and partly to the increased vigor with which the collections have been prosecuted.

Sleepy Water Bureau Men Laid Off

Philadelphia, Pa.—Over twenty employees of the Water Bureau have been suspended without pay for two weeks as the result of having been caught asleep at their posts by Chief Dunlap, who made a midnight call on some of the men employed at the pumping stations of the filtration system. At the Wentz farm pumping station the Chief found one fireman on duty, while five others slept. All should have been on duty. Among those suspended are engineers, firemen and oilers.

Water Works Drain on River

Pittsburg, Pa.—That the taking of municipal water supplies from the Ohio river may affect the stage of water so as to impede navigation, especially in the low periods, is apparently the view of the United States Engineers. Major Henry C. Newcomer, of the United States Engineers, in charge of the Ohio river, has begun to secure data showing the amount of water taken from the river at various points through municipal plants.

Water Purification in New Orleans

New Orleans, La.—Superintendent George Earl, of the Sewerage and Water Board, tells a very interesting story of the operation of the water purification station and the water that is being furnished. He says the coagulated water was first applied to the filters February 7, and since that date they have been in constant service and all of the water furnished has been filtered, and is of a character which is entirely safe and satisfactory for every use. The river water, since its treatment was begun, has ranged from 400 to 900 parts per 1,000,000 of suspended matter (mud), and from 70 to 120 parts per 1,000,000 of carbonate of lime and magnesia. Coagulation and subsidence prior to filtration has reduced the suspended matter from 25 to 125 parts per 1,000,000, averaging about 50, and the alkalinity (carbonates of lime and magnesia) to an average of 43 parts per 1,000,000. The filters eliminate the remaining suspended matter, or reduce it to an average of one part per million or less, which cannot be detected by any but a trained observer, which represents a degree of clarification far ahead of that obtained by most public water supplies. This is very gratifying for the first tryout. The average quantity of water treated per day has been eight million gallons, ranging from four to twenty millions. The average period between filter washing has been fifteen hours, and about 3 per cent. of the filtered water has been used in washing the filters.

Water Mains Stood Firm

Philadelphia, Pa.—Several more breaks in water mains have been reported to the Bureau of Water. Chief Dunlap says that many pipes throughout the city have long been in service, and that among those breaking since the increased pressure was added with the introduction of filtered water for all the city, have been some in use for upward of forty years, while in one section of the city the pipes had been in use for a much longer period. Not a single break has occurred in the new steel mains which convey the filtered water from Torresdale down through the city, a distance of 16 miles, to McKean street, and distribute it to the hundreds of miles of service pipes for distribution.

STREET LIGHTING AND ELECTRIC POWER**Meter Provers Found Correct**

Madison, Wis.—The gas testers in the service of the State Railroad Commission have finished their examination of the provers used by the Racine Gas Light company. The provers were found to be correct, and the agitation which had been going on for some time as to imperfect testing apparatus has been stopped. The company is now well supplied with meter-testing facilities, having a specially equipped room where men are kept constantly at work testing and repairing. The tests at present are made with air, as the State Commission has not yet made a definite ruling on the subject.

Electric Signs Give Metropolitan Appearance

Warsaw, Ind.—Local merchants are demanding that an ordinance providing a penalty for the placing of any signs over sidewalks be repealed. They declare that electric signs give a city a metropolitan appearance, and that \$600 worth of such signs would be placed in Warsaw this spring if the ordinance were repealed.

Preliminary Report of Census

Washington, D. C.—The Census Director has issued a preliminary report on the electric light and power stations of the United States. The statistics relate to the year ending December 31, 1907. The totals do not include isolated plants or plants that are idle or in course of construction. The total number of establishments in 1907 was 4,714, an increase of 30.2 per cent. over 1902. These plants gave employment to 34,642 wage earners and developed 5,858,121,680 kilowatt hours. These central stations supply current for 555,921 arc lamps and 41,807,944 incandescent lamps. The total horsepower capacity of the stationary motors served was 1,649,026. The increase in lighting during the five years has been considerable, but the greatest increase was in the number of motors supplied with current, a total increase of 276.5 per cent.

GOVERNMENT AND FINANCE

Women Can Vote on Bond Propositions

Battle Creek, Mich.—City Attorney Edward H. Decker has given it as his opinion that women can vote in the coming election to decide a proposed bond issue for a city hall and bridge. The new State constitution provides that all females owning property, possessing the same qualifications as a male voter, can cast a ballot on the bonds.

Chelsea Tax Rate Reasonable

Chelsea, Mass.—Chelsea's annual budget, made up by the Board of Control, who were appointed by the Governor to manage the city during its period of rehabilitation, provides for an appropriation of \$473,597, to which is added the \$60,000 brought forward from last year. The total of \$533,597 is \$5,833 less than a year ago. Chairman McClintock said the tax rate would probably not be over \$23.

City Code Supplement is Out

Chicago, Ill.—A supplement of 433 pages to the municipal code containing all the general ordinances and amendments to former sections which have been passed by the council between the time when the code was issued, March 20, 1905, and January 1, 1909, is now being published by the City Clerk. In the amendments to the prior ordinances, changes from the wording of the code are shown by italics, while omissions of sections or portions are denoted by asterisks. It contains an index, which is in itself an abstract of all changes, new matter and omissions. It also has a special index for the new and amendments to the old building ordinances, with cross references to the affected sections of the building ordinance of March 13, 1905.

Tax Payers May Save 3 Per Cent

Macon, Ga.—A resolution has been passed by Council allowing a discount of 3 per cent on taxes paid before April 1. The regular way of paying taxes is by quarterly installments during the coming year.

Annual Estimates Made in Great Detail

Memphis, Tenn.—The annual estimates from all departments of the amounts needed to conduct them for the current year are made out in much greater detail than usual. It is the intention to confine the expenditures to the specific purposes for which they are authorized. All overdrafts from last year are included in the estimates, making them appear unusually large.

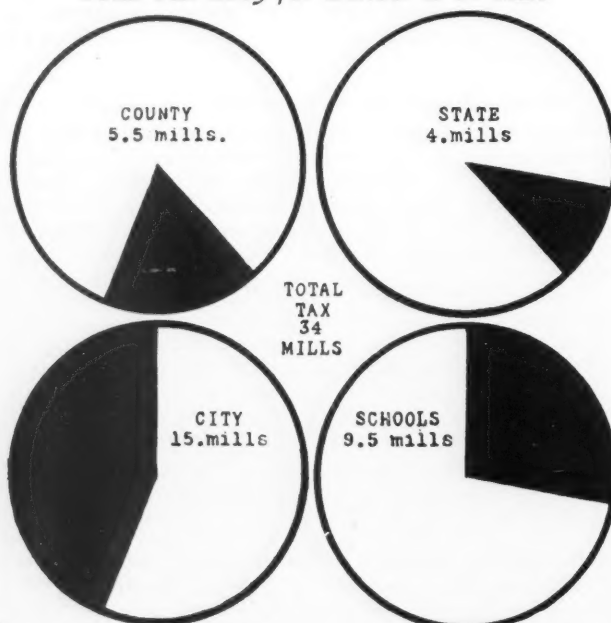
Tax Levy Graphically Explained

Denver, Colo.—The purposes to which the proceeds of taxes are applied is graphically illustrated in "Denver Municipal Facts" as follows:

Want City Budget Itemized More Fully

Pittsburg, Pa.—The Committee on Municipal Affairs of the Chamber of Commerce has been making a study of the

Total Tax Levy for Denver is 34 Mills



city budget for some four months and has submitted a report. The committee finds that the greatest shortcoming is the lack of uniform methods in the different departments in drawing up the annual estimate, and a too great tendency to lump items rather than itemize them separately, allowing an opportunity to create pockets in general accounts which, the committee believes, is likely to lead to extravagance. It is advised that there be a requirement in the appropriation ordinance that a certain portion of the amount appropriated for any bureau shall be spent for salaries, in accordance with the figures given in the department estimate for that bureau. The same requirement should apply to supplies for each bureau. A new classification system for the estimates in each bureau is suggested as follows: 1, salaries and all labor; 2, maintenance and repairs; 3, equipment, including apparatus of a permanent nature; 4, supplies, including furnishings not of a permanent character; 5, miscellaneous.

A Commission Government

Bessemer, Ala.—There is an earnest movement on foot to ask the special session of the Legislature to grant a commission form of government for this city. Birmingham will apply for the commission form and now Bessemer wants it. Several other cities will in all likelihood follow their example.

Haute Finance

Jeffersonville, Ind.—Mayor E. N. Flynn has a new scheme for the good of the city. He says he intends to bring about an increase of 50 per cent. in the assessed value of city property and then to effect a reduction of 60 per cent. in the tax levy. His idea is that the assessable property would thereby be made over \$6,000,000, placing Jeffersonville again in the fourth class, from which the Legislature tumbled it into the fifth. He also figures that the city would be able to make a better showing by being able to advertise itself as having a very low tax rate.

Costs Half to Collect Automobile Fines

Middletown, N. Y.—The township authorities last year collected \$3,085.75 in automobile fines, but the cost of collection amounted to \$1,414.05. The township paid \$875.95 for watching autos and detective work.

Emmet, Mich., on Rocks

Emmet, Mich.—This little village is on the financial rocks. The town owes its Treasurer \$13 and hasn't a cent.

REFUSE COLLECTION AND DISPOSAL

Big Garbage Plant is Nearly Ready

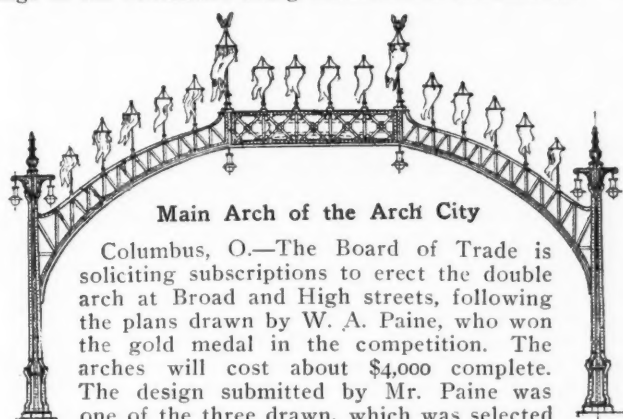
Baltimore, Md.—The mammoth garbage-disposal plant of the Southern Products Company, at Bodkin Point, on the Chesapeake Bay, will soon be put into operation. The apparatus is of modern type, and comprises 28 digesters, 6 boilers of 200 horsepower each, 7 presses, 2 screw presses and 14 catch basins. When disposed of in its final shape the garbage is in the form of two valuable products—namely, the oil, which forms the basis of a valuable fertilizer, and the grease, out of which soaps are made. The plant used is rented from the city by the company at a cost of \$100,000. It had reverted to the city under the terms of the former contract with the Sanitary Contracting Company, and under the terms of the present contract it will revert again to the city at the end of 10 years—the period of the contract. The company has spent about \$35,000 extra improving the machinery. In addition to the plant itself, the company has been building a fleet of 16 barges in which the garbage will be towed from the city to the plant, and at Bodkin Point a large receiving wharf has been built.

Ready to Assume Garbage Contract

Reading, Pa.—Harry J. Adams, who was awarded the contract to collect and dispose of the city's garbage for the next five years, announces that the Keystone Sanitary Reduction Company, which has been formed, will be ready to assume its obligation April 6, when the award takes effect, even though the garbage appropriation is not made by then. The plant, which is located at O'Reilly's Gap, an elevated location northeast of the city, will be fully completed by the time the contract becomes effective. Mr. Adams says that it will be absolutely odorless.

Light Probers Fail to Agree

Syracuse, N. Y.—There is every likelihood that two reports will be submitted to the Common Council by its Special Lighting Investigating Committee. The majority report will be offered by Chairman John H. Bedford and the minority report, if there is one, will be offered by Alderman Isaac C. Davis. From the moment the special committee was created for the purpose of investigating the rates and service of the Syracuse Lighting Company there has been dissension in the committee. At several public hearings there were no witnesses at all, these being largely devoted to spirited arguments between Alderman Davis upon one side and Alderman Bedford and Assistant Corporation Counsel William Rubin upon the other. These grew out of a contention by Alderman Davis that, inasmuch as witnesses could not be induced to testify before the committee, evidence contained in private communications to him and personal conversations he had with complaining patrons of the company should be admitted and made a part of the report. Alderman Davis' determination to persist in this has led to the likelihood of two reports on the findings of the committee being submitted to the council.



Main Arch of the Arch City

Columbus, O.—The Board of Trade is soliciting subscriptions to erect the double arch at Broad and High streets, following the plans drawn by W. A. Paine, who won the gold medal in the competition. The arches will cost about \$4,000 complete. The design submitted by Mr. Paine was one of the three drawn, which was selected by the committee of six architects, of which A. M. Allen was chairman. The design calls for four columns, one on each corner, with lateral arches spanning the street. A rectangle is formed in the center. The arches have flag and light sockets every few inches. In the center is a space for interchangeable electric lights, which may read "The Arch City," or blaze forth greetings to the various conventions. The columns are to be constructed of structural steel plates and angles and the top of each column will be adorned with four flaming arc lights, of great candle-power. In the middle above the electric sign a large socket is placed for an immense flag.

Wilkes-Barre To Have Dollar Gas

Wilkes-Barre, Pa.—The Wilkes-Barre Gas and Electric Company, in a communication to Council, made two offers of a reduction in the price of gas from \$1.10 to \$1 per 1,000 cubic feet. The first proposition was a reduction to \$1.05 on April 1, if certain restrictions imposed on the light company in the placing of wires and poles and in the laying of pipes were removed; also a further reduction to \$1 on April 1, 1910, providing the company has the co-operation of Council and no unusual conditions arise to impose unforeseen burdens on the company. The other proposition, made subject to the same conditions, was for a reduction to \$1 on October 1. The latter proposition was accepted.

Chattanooga Power Plant

Chattanooga, Tenn.—It is announced that current from the great power plant being constructed a few miles below this city, will be turned on July 1. At that time the lock and the power house will be completed and water power will be available sufficient to run a portion of the machinery. The plant will generate and supply 73,000 horsepower when completed, and the current will be for sale at very low rates.

Gentleman's Agreement Regarding Street Lighting

Harrisburg, Pa.—Believing that a gentleman's agreement regarding prices to be bid for street lighting exists between two Harrisburg companies, the directors of an electric plant in Steelton have begun the enlargement of their plant with a view of disrupting the social arrangement.

FIRE AND POLICE Prowling Ordinance Will be Beneficial

Knoxville, Tenn.—That the "prowlers" ordinances, which is now before the city council will be of more benefit to Knoxville officers in enforcing the law than any other law on the city statute books, is the prediction of Chief of Police W. P. Chandler. The object of the ordinance is to endow the members of the police department with power to arrest all suspects or "prowlers" found on the streets or in suspicious places. At the present time, if a suspicious character is seen and reported to an officer no arrest can be made unless some definite charge is brought against the party. It is the object of the proposed ordinance, providing it passes the city council, to make a misdemeanor out of a case where a party appears to be acting strangely and suspiciously, and can give no reason for acting in this way. In Chattanooga and other cities of the country, it is said an ordinance similar to the "prowlers" ordinance is of more benefit to the officers in breaking up and preventing crime than any other city law.

Extra Inch Checks Would-be Firemen

New York, N. Y.—Having increased by one inch the required height of candidates for appointment to the Fire Department, the Municipal Civil Service Commission finds now that there is a scarcity of eligibles 5 feet 8 inches tall. Heretofore, with the height required, 5 feet 7 inches, there have been usually about 4,000 names on the list. Under the new rule, there are less than 1,000, and the Commission decided to keep the list open until April 15. The change in height required was made at the request of Chief Croker.

Providence Firemen to be Drilled

Providence, R. I.—With the opening of the spring season the Providence Fire Commissioners intend to have the members of the department engage in drills of a practical nature. The idea of having drill towers similar to those in use in many of the cities of this country has been agitated for several years, but the project has not yet borne fruit. Drills on a limited scale have, however, been engaged in at the various stations, and it is the intention of the Commissioners to continue these drills and extend them as far as it is possible with the means at hand.

Requirements Regarding Police and Fire Chiefs

Utica, N. Y.—The Municipal Civil Service Commission has passed a resolution to the effect that no one will be eligible to take the examination for chief of police excepting the deputy chief and captain and no one will be eligible as a candidate for chief of the fire department excepting the two deputy chiefs and captains.

New Fire Risk Code is Ready

Newark, N. J.—A new fire prevention code has been drafted by C. Albert Gasser, of the bureau of combustibles and fire risks, in conjunction with Fire Commissioner Stratton, and it has been handed to Alderman Jerome T. Congleton for introduction in the Common Council. The code represents a compilation of all the existing ordinances designed to prevent fire hazards and incorporates new regulations pertaining to the operation of moving picture shows, clothes cleaning establishments and fireworks stands. There are fifty sections in the proposed code, subdivided into chapters by titles. The first section provides that the ordinances enumerated shall be designated as "The Fire Prevention Code of the City of Newark," and under the provisions thereof the inspector is given the same rights conferred on him by the State law under which the bureau was created. The State law gives the inspector power to enter buildings, inspect them and their contents and to make recommendations and regulations governing the manufacture, sale or storage of goods of an explosive or combustible nature.

Mayor's Fines to Aid Police Department

Wilkes-Barre, Pa.—In councilmanic circles the advisability of using the fines collected by the Mayor for improvement of the police department is being discussed and there are many who think the idea is a good one. According to present system all fines collected are turned over to the city treasurer and thus become a part of the general fund. Chief of Police Long said, that if the fines collected were used for maintaining the police department or improving it, the city could have one of the finest departments in the country.

Clean-up Day at Charlotte

Charlotte, N. C.—Over 2,000 school children worked like Trojans on "Clean-up Day," gathering up every stray bit of trash, glass, pottery and brickbats that could be found high and low, in a contest for prizes offered by the Woman's Club to the child raising the largest heap of rubbish. As a result many of the streets of the city had trash piled waist and head high along the gutters ready for the wagons to convey them to crematory. The chief of the sanitary department states that it may require a week for his department, working with the full street force, to get rid of the accumulated rubbish.

Harrodsburg to Have Cleaning Day

Harrodsburg, Ky.—Representatives from the various clubs and other organizations, including the secret societies of the city, met at the Library rooms and affected an organization for a house-cleaning day for the town on April 22. On this occasion the streets, alleys, front and back yards and vacant lots will be cleaned. It will be made a general hurrah day and will result in a cleaner town. The business men will be canvassed and asked to assist in the movement by contributing their time, and many of them are expected to handle the spade and hoe, while others will drive wagons and dump-carts. Mrs. Letcher Riker, president of the Kentucky Federation of Women's Clubs, has ordered one thousand catalpa speciosa trees which will be planted on that day throughout the town.

Grand Jury Helps Clean Streets

San Francisco, Cal.—A special committee of the Grand Jury has taken up the fight for cleaner streets, and as an incident of that fight they intend to make the contractors pay more heed to the ordinances regulating the use of the public streets for building materials. The committee, together with several representatives from the Downtown Association, paid an unexpected visit on the Board of Public Works to talk over the question of street cleaning.

"Civic Week" to Make Town Spic and Span

Spokane, Wash.—Mayor C. Herbert Moore has set aside eight days, beginning April 3 as "Civic Week," to be devoted to the cleaning of streets, alleys and private grounds, the work of beautifying the city and the discussion of civic problems under the direction of the city beautiful committee of the 150,000 club, the city park commission and the various ward improvement clubs. It is expected that 60,000 men, women and children will take part. The week will furnish one of the most remarkable and at the same time wholesome spectacles ever witnessed in any city of the 120,000 class on this continent. Men who have made millions in the mines, forests and railroads and other lines of commercial, financial and industrial activity will work shoulder to shoulder with laborers, mechanics, clerks and office men, and on the morning of April 11 the city of Spokane may be expected to be as spick and span as a society debutante at her coming-out party. One of the features of the general cleaning-day plan, which was originated in 1906 by Audrey Lee White, president of the city park commission and civic beauty exponent, will be the planting of thousands of trees, shrubs and vines by the Spokane Tree Planting Association, composed of 12,500 children above the third grade in the public schools.

RAPID TRANSIT

Ouster Proceedings Threaten Trolley Road

Hamilton, O.—The special Committee on Street Railways of the City Council has adopted a report declaring "That the Ohio Traction Company, operating the Hamilton city lines and the interurban lines between Cincinnati and Dayton, has forfeited the confidence of the public by its habitual violation of law, and its refusal to obey the regulations of the city." The Council adopted a resolution, with but two protesting votes, employing counsel to investigate the franchise of the company with a view to forcing it to submit to control. It is even possible that ouster proceedings may

Kansas City Plans Traction Partnership

Kansas City, Mo.—The Utilities Commission of Kansas City is to adopt a plan of traction settlement based on the Chicago ordinances. The Commission was recently in Chicago making a study of the relations between the city and the two traction companies.

Traction Subways in Sight for Chicago

Chicago, Ill.—Construction of at least one subway from the city's share of street railway profits is declared possible by the experts who have been studying the underground problem for nearly a year. The report contains detailed propositions for the building of two tunnels immediately, and advances the belief that the traction fund already piled up will be sufficient to make a good beginning on one of them, and that the continued revenue will meet the expenses as they occur. The first aim of the city, it holds, should be to relieve the congestion in the downtown district, and for that reason the question of rapid transit to outlying sections of the city is subordinated to the needs of the loop. The first tunnel to be built, the report advises, should be run from the neighborhood of Twenty-second and State streets to Chicago avenue and Orleans street, traversing the present business district in Wabash avenue. Under that street it is practical to lay four tracks between the present curb lines, leaving room for subsidewalk and basement show windows in the buildings lining the street. South of Twelfth street it would be necessary, because of narrower streets, to have the subway divide, running only two tracks to a street, and meeting again in a general depot at the terminal. Twentieth and Twenty-first streets are mentioned for the two branches on the south side, and Ohio and Rush, and Cass and Indiana streets for the corresponding divisions of the north end. A four-track subway is not recommended for the second subway, which would run from a terminal in the vicinity of Halsted and Lake streets east to State street, making a loop and returning to the other terminal at Blue Island avenue and Halsted street. Two subways practically paralleling each with two tracks, and joining in a four-track subway in State street is recommended, Jackson boulevard and Adams street being the southern branches in the business district, and the northern halves running under Washington and Randolph streets. The subways would be intended to accommodate both elevated and surface lines, two tracks being used for each. In the Wabash avenue subway the plans contemplate stations for each style of road every two blocks, making stations every block. All surface-line stations would be on one side of the street and elevated stations on the other. Stations would be situated in the middle of blocks and would be about one block long. Each would have eight entrances with stairways leading to the first level. From there six broad stairways would lead to the train platforms.

Sliding Scale of Fares for Cleveland

Cleveland, O.—The ordinance City Solicitor W. D. Baker was directed to prepare, based on suggestions of Judge Taylor, has been submitted to Council. It provides that if it is accepted by the railway company, operation shall begin with 3-cent cash fare and 1-cent transfer, and continue at that rate for a period of eight months. If this rate of fare proves inadequate to meet the 6 per cent on the stock, it is to be raised to the next highest provided for in the sliding scale. It may thereafter be raised and lowered to meet the exigencies of the situation.

Pittsburg Traction Conditions

Pittsburg, Pa.—A report on traction conditions in Pittsburg has been made by Stone & Webster, engineers and operators of traction companies, to the Pennsylvania Railroad Commission. The findings against the Pittsburg Railways Company summarized are: "Insufficient cars, irregularity in the schedule, bad ventilation and poor lighting, delay in loading due to the 'pay-as-you-enter' plan, lack of co-operation between the city and company, overheating of the cars, failure to regulate by spacing between cars and absence of starters at important points in the terminal districts, failure to provide necessary switchmen." The findings for the company are: "Delay in traffic due to incompetent police regulation, inadequate bridge approaches and delay due to failure to secure right of way owing to vehicle and other traffic, physical condition of tracks, overhead construction and rolling stock excellent and well maintained, motor and brake power adequate, delays caused by blocks where steam railroads intersect at grade, car operatives careful and well trained, travel reduced by the panic of 1907-8, system of loops and terminals in the downtown district best obtainable under present conditions."

MISCELLANEOUS

City Hall Sold Cheap

Cedar Rapids, Ia.—The old City Hall, the building which for a number of years housed the departments of the city administration, and adjoining buildings have been sold for a total of \$572. The old City Hall building proper brought \$47. This building was one of the earliest structures erected in the city, for many years doing service as a hotel of about the fourth class. Later it was bought and transferred into an administration building. Then the city sold the city hall property for \$66,500 and acquired the property known as May's Island, in the Cedar river, and for which about \$110,000 was paid. All the departments of city government are now housed in buildings on the island.

Would Make City Real Spotless Town

Cleveland, O.—Smoke Inspector John Kraus has begun a campaign to have 10 per cent of the factories, apartments and office buildings in Cleveland use smokeless coal or smoke consumers. With this 10 per cent persuaded, Mr. Kraus says that every firm in the city will be using smokeless methods. Fully 90 per cent of the firms now are co-operating with the city to make Cleveland a spotless town. "We have just completed a survey of the city," said Mr. Kraus. "Only 10 per cent of the firms are not trying to lessen smoke. We will not arrest the offenders, because in the past we have been able to obtain the desired result without prosecution, but will keep everlastingly at them."

Forestry Department Co-operates With Schools

Cleveland, O.—Co-operation between the city forestry department and public school officials in the matter of carrying out a course of instruction in field botany and forestry for seventh and eighth grade and high school pupils, is now being considered. City Forester Boddy is mapping out a course that will take in the practical application of the study of botany and forestry. If the plans can be carried out, pupils from the higher grades will make frequent trips to the city parks to receive botanical instruction and headquarters will be established near the greenhouse and tree nursery in Gordon park.

Citizens Advised to Consider School Facilities

Chicago, Ill.—The School Board has sent out hundreds of circulars advising families contemplating moving to consider school facilities in the section in which they will reside. In 54 schools there is an excess of 3,359 pupils and in 194 schools there are 24,728 vacant seats.

German City Encourages Family Gardening

Frankfort, Germany.—Consul-General Richard Guenther reports that to encourage gardening among the working classes the city authorities of Frankfort leased at a very low rent small tracts of land belonging to the city. Altogether there are about 36 acres of municipal land let out for that purpose, divided among 258 different parties and to the association for promoting gardening on a small scale. Besides this, a tract of about 4 acres of municipal land has been let for the same purpose to the employees of the city's tramways and electric works. The city will devote additional land for small gardening as the demand and utility for such will increase. These little gardens are a great source of contentment to the leaseholders and their women and children, who take much interest in them. This system is also in vogue in Berlin and other German cities.

Shade Trees for Chicago

Chicago, Ill.—Club women who have been active in the campaign for the appointment of a tree commission and a city forester to supervise the planting of shade trees in streets and to protect them from destruction and pests will give thousands of trees to Chicago this year, shade trees and seed and berry trees for the birds. These are to be planted in the poorer residence quarters.

Parks Add to City Values

Madison, Wis.—A committee appointed to investigate on the question of how much, in its judgment, the present assessed value of the entire property of the city has been increased by the work done by the Madison Park and Pleasure Drive Association and the city by securing parks and drives, both inside the city and beyond its limits, has decided that from ten to fifteen per cent of the increase is due to the establishment of the parks and drives.

LEGAL NEWS

Summary and Notes of Recent Decisions—Rulings of Municipal Interest

Police Officers—Salaries

Sullivan vs. City of Bridgeport.—The refusal of the Board of Apportionment and Taxation of the City of Bridgeport to appropriate sufficient funds to pay the increased salary for patrolmen, authorized by ordinance, would not prevent a policeman from recovering the increased salary, as funds for that purpose could be made available either by reducing other expenses of the Police Department, or if that was not possible, the City Council could reduce the number of patrolmen or could, under its charter, make a special appropriation for that purpose out of any unappropriated city revenue, and, in the absence of a showing that there was not enough left unexpended out of the appropriation for the Police Department to pay the increased salaries, the failure of the Board of Apportionment and taxation to make an appropriation for that purpose was not a defense to an action for the increased compensation. The charter of the city of Bridgeport prohibits the increase of the salary of any officer appointed for a definite term during his term of office, and another section makes certain provisions apply both to persons holding office for a fixed term and those holding during good behavior. Held, that the provision relating to the increasing salaries applied only to officers appointed for a definite term, and, since policemen held office until removed for cause, their salaries could be increased during the continuance of their appointment to the service.—Supreme Court of Errors of Connecticut.

Validity of Bond Election

Smith vs. Town of Belhaven.—Under Act March 1 1907, authorizing a town to issue bonds for purposes specified on the approval of a majority of the voters thereof, without prescribing that a vote shall be taken in a separate ballot box on each proposition, the questions of the issuance of the bonds may be voted on in one box, notwithstanding the Constitution prohibiting a municipal corporation from contracting any debt, unless by vote of the majority of the qualified voters therein.—Supreme Court of North Carolina.

Defective Sidewalk—Amount of Damages

City of Owensboro vs. Williams.—Where plaintiff was injured one dark night by walking along a brick walk, and tripping over a plank placed edgewise between such walk and a concrete pavement, the questions whether the sidewalk was reasonably free from defects and in a reasonably safe condition, and whether plaintiff at the time of her injury was exercising ordinary care, were properly submitted to the jury. A verdict of \$1,250 is not excessive for injuries received by plaintiff in falling over an obstruction in a sidewalk, resulting in the bruising and injury of one of plaintiff's legs.—Court of Appeals of Kentucky.

Rotten Wood Sidewalk—Accident

City of Louisville vs. Lambert.—One sustaining physical injuries in consequence of the negligence of another is entitled to compensation for the pain endured. Where a plank sidewalk has from long use and lack of repair rotted away, until it becomes dangerous to pedestrians, the city is liable without further notice for injuries received by a pedestrian because of the defect.—Court of Appeals of Kentucky.

Vacation of Streets

VanBuren vs. Village of Elmwood.—An act of the Legislature entitled "An act to provide for vacating streets, alleys and public grounds in towns and villages," passed and approved March 10, 1871, in so far as said act confers upon County Boards the power to vacate streets within incorporated villages, was repealed by the act of the Legislature entitled "An act to provide for the organization, government and powers of cities and villages," passed and approved March 1, 1879.—Supreme Court of Nebraska.

NEWS OF THE SOCIETIES

Mayors and City Attorneys of Alabama.—Mayor W. M. Teague, of Montgomery, Ala., has drawn up a communication, which he is sending out, calling a meeting of Mayors and City Attorneys in Montgomery on April 14 to discuss for the most part the restoration of the city allotment of road and bridge fund of the various counties. In a case brought up from Jefferson County, the Supreme Court held the bill allotting a portion of this fund to be applied in the cities was declared to be illegal, and the cities, as a consequence, have lost many thousands of dollars.

American Society of Civil Engineers.—More than 800 engineers met at the Engineering Society building in West 39th street, New York City, March 24, to discuss the conservation of natural resources. They represented principally the American Society of Civil Engineers, the American Institute of Mining Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. Dr. James Douglass presided. President Taft and Governor Hughes sent letters of regret, in which both praised the engineers for their cooperation in the conservation movement. One of the speakers was Charles Whiting Baker, editor of the Engineering News. He talked on "The Waste of Our Natural Resources by Fire."

Civic Improvement Society, Evansville, Ind.—A Civic Improvement Society planned to contain from 10,000 to 20,000 members has been organized with a nucleus membership of thirty-four prominent citizens. Expenditures of \$5,000 in prizes and for lectures to stimulate interest in the improvement of Evansville are planned by the society. Every practical scheme for the betterment of Evansville in looks and conveniences will receive the support of the society. The ten things which the society will work for first are:

- Public playgrounds and swimming pools.
- A beautification of the parks.
- A public rest room in the business district.
- The solving of the smoke problem.
- Making railroad approaches to the city attractive.
- Stimulating interest in beautiful lawns by prizes.
- Child's backyard gardens, with prizes for the best gardens.
- Skillful care of trees.
- Clean streets.
- Rest places for workers in factories.

The meeting was called to order by E. Q. Lodeyear, William E. French was chosen temporary chairman, and Secretary Corbin, of the Associated Charities Association, was made secretary of the meeting. A letter was read from Mayor Nolan urging that the establishment of playgrounds be the first object of the society. Frank W. Cooley, superintendent of public schools, Mrs. Katherine Snyder Busse, of the Federation of Women's Clubs, N. W. Bryant of the Retail Merchants' Association, also addressed the meeting.

Ex-Councilmen of Columbus, O.—An organization to be composed of all the ex-councilmen of Columbus will be formed soon, according to plans now being made by several ex-councilmen. Otto Nusbaum and W. A. Nusbaum, members of the council in 1890, have the arrangements in charge for the first meeting, which will be called within a few days. It will be nonpartisan and will have for its object the promotion of all municipal betterments.

Illinois Water Supply Association.—At a recent conference of water works men held at the University of Illinois, the Illinois Water Supply Association was formed. The objects of the society are the advancement of knowledge relating to water works and water supply, the conservation of water supplies for public use and the encouragement of social intercourse among its members. Any person interested in the water works or the water supplies of the State of Illinois or in the advancement of knowledge concerning the same shall be eligible to membership. Associates will be firms or representatives of firms engaged in dealing in supplies used by water works. Annual meetings will be held at the University of Illinois, Urbana, Ill., or at some other place selected by the executive committee. The proceedings of the society will be printed, the first volume to contain the papers presented at the Urbana meeting, February 16.

American Society of Mechanical Engineers.—The John Fritz medal for 1909 has been awarded by the board of award specially selected for the purpose and consisting of four members of each of the national engineering societies, to Mr. Charles T. Porter, Hon. Mem. Am. Soc. M. E., for his work in advancing the knowledge of steam engineering, and in improvements in engine construction. The public ceremony of the presentation of the medal to Mr. Porter will take place in the large auditorium of the Engineering Societies Building, No. 29 West Thirty-ninth street, New York, at 8:30 p. m. on Tuesday, April 13. Besides the presentation there will be addresses by representatives of the four groups of the profession most concerned. Dean W. F. M. Goss, of the University of Illinois, Mem. Am. Soc. M. E. and Am. Inst. E. E., will speak on "The Debt of Modern Industrial Civilization to the Steam Engine as a Source of Power"; Prof. F. R. Hutton, of Columbia University, Hon. Sec. Am. Soc. M. E., "The Debt of the Modern Steam Engine to Mr. Charles T. Porter"; Robert W. Hunt, of Chicago, Mem. Am. Soc. C. E. and Past Pres. Am. Soc. M. E. and Am. Inst. M. E., "The Debt of the Era of Steel to the High-Speed Steam Engine"; Frank J. Sprague, of New York, Mem. Am. Inst. M. E. and Am. Soc. C. E., "The Debt of the Era of Electricity to the High-Speed Steam Engine." Henry R. Towne is chairman of the board of awards, while Henry R. Towne, Charles Kirchoff, Charles Warren Hunt, Schuyler Skaats Wheeler and F. R. Hutton comprise the committee of arrangements.

Washington Society of Engineers.—John Hays Hammond, Arthur P. Davis, who accompanied President Taft to Panama to study the progress of the canal work, and Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry, March 17 addressed the Washington Society of Engineers on "The Engineer in Politics." The meeting was held at Rauscher's, and was attended by 500 or more members of the society and their friends. Mr. Hammond declared that the day has passed when politics and political positions are controlled by "ward heelers." The American public has awakened, he said, to the realization that to make the republic a success it is necessary for every citizen to take a hand in politics, and elevate to governmental positions only those men whose training and education have fitted them for such positions. "Men of scientific ideas and education," Mr. Hammond

declared, "are the men who will eventually rule this country. The citizens are rapidly grasping this view. To-day there are more scientific men holding offices than ever before. Next year the number will be even larger than that of to-day. No better class of men can be found than engineers. Their work and the preparatory work required of them before they become efficient engineers fit them to master difficulties with which the mind of the layman would not be able to cope." Dr. Wiley stated that engineers in particular, and other men of scientific minds in general, are more qualified to enter politics than their less fortunate brothers. Engineers, he said, are training themselves these days to see the true side of everything. A scientific engineer can look over a piece of work and can readily tell whether it is of a permanent character. They make true observations these days, the engineers. What applies to a stretch of road, a bridge, or a dam is equally applicable to politics. "It is to be lamented that there are fewer scientific men in Congress to-day," continued Dr. Wiley. "There is but one practical engineer there. There used to be a chemist—which profession, by the way, ranks with that of an engineer—but he remained only one term. There probably are a few physicians, ministers, and inventors, but their number is infinitely small. The halls of Congress should contain more men of these classes." Mr. Davis said the movement to place men of scientific minds and tendencies in politics is annually growing, and much headway has been gained within the last few years. David Carll, president of the society, presided. Refreshments were served at the conclusion of the meeting.

Municipal Art Society of New York.

—Since the success of the tuberculosis exhibition in New York City in creating great public interest, a still further exhibition of a different kind is to be given under the joint auspices of the Committee on Congestion of Population in New York and the Municipal Art Society of New York, in the armory of the Twenty-second Regiment, N. G. N. Y., Columbus avenue and Broadway, Sixty-seventh and Sixty-eighth streets, from May 3 to May 16. A conference for three days, beginning May 3, is to be held at which lectures will be given by experts. The exhibition will show what foreign and American cities are doing in planning more beautiful cities. The art exhibits will be comprehensive and include municipal and federal buildings, parks and playgrounds, public monuments and foliage. The Committee on Congestion of Population will show conditions in some American cities in housing, transit systems and industries, with plans that are being made for remedying undesirable conditions. Special features will consist of work being done by the United States in Porto Rico, the Pittsburg Survey exhibit, New York's bridge and dock development, the metropolitan sewerage commission, and the extent to which the decoration of schools has gone. Many American cities of 50,000 have congestion of population in tenements and factories which create difficult problems. As an effort at reaching the problem, the exhibition is to demonstrate that no city can hope to overcome its disabilities and cannot develop normally without a plan which "determines its growth along economic, hygienic and aesthetic lines for at least fifty to seventy-five years to come."

Montclair, N. J., Municipal Art Commission.—Plans for the beautifying of Montclair, N. J., were read by John B. Nolan, landscape architect, of Boston, at a dinner that William B. Dickson, first vice-president of the United States Steel Corporation, gave for his associates on the Montclair Municipal Art Commission, March 22, in the Hotel Montclair. The Nolan plans will make necessary the straightening and widening of many streets and avenues; the removal of unsightly buildings and obstructions, the planting of shade trees and the making of many other improvements, all this at a cost of millions of dollars. At the commission's first meeting last April it was found a competent man must be engaged to report a plan. As the public meeting had not authorized the expenditure of money, the commission engaged Mr. Nolan at its own expense. His fees probably amount to \$5,000, but the commissioners are well-to-do. A public meeting will be called next month to consider the commission's report.

Ohio Association of Contractors.—The Ohio Association of Contractors has opened a permanent office in the First National Bank Bldg., Columbus, in charge of Mr. Arthur J. Thatcher, secretary and treasurer. The officers are: O. P. Rieley, Columbus, president; William M. Graham, Columbus, vice-president; James E. Conley, Dayton; Edward Kelley, Portsmouth; William J. Wildes, Akron; L. A. Fauver, Lorain; Thomas J. Mulligan, Lima; William H. Adams, Zanesville, and W. H. Luchtenberg, Columbus, trustees.

Commercial Club of Kansas City, Mo.—The club has decided to raise \$500,000 to re-establish a freight-boat line between Kansas City and St. Louis, because of alleged discrimination by railroads against Kansas City shippers.

Highway Commissioners of Erie County, N. Y.—Every Highway Commissioner of the towns of Erie County was present at a session of the Good Roads Convention, March 20, in the Supervisors' chamber at City Hall, Buffalo, N. Y. The discussions were interesting and nearly every commissioner participated in them by asking questions, eliciting information upon various phases of good roads construction under the new highway law. Representatives of the State Highway Commission and County Engineer George C. Diehl were among the speakers. The session was a school instruction for highway commissioners, and all profited by the convention.

Calendar of Meetings

April 7. **Western Society of Engineers.**—Regular meeting, 1735 Monadnock Block, Chicago, Ill.—J. H. Warder, Secretary.

April 7. **American Society of Civil Engineers.**—Regular meeting at Society House, 220 West Fifty-seventh street, New York.—Charles Warren Hunt, Secretary.

May 11-14. **Playground Association of America.**—Third annual Congress, Pittsburg, Pa.—Henry S. Curtis, 705 Ouray Building, Washington, D. C.

May 16-19. **City Marshals and Chiefs of Police of Texas.**—Annual convention, Galveston.—Chief J. H. Maddox, Fort Worth, Chairman, Executive Committee.

June 1-4. **National Electric Light Association.**—Thirty-second convention, Atlantic City, N. J.—John F. Gilchrist, Engineering Societies Building, 29 West 39th street, New York, N. Y., Secretary.

June 8-12. **American Water Works Association.**—Twenty-ninth annual convention, Milwaukee, Wis.—J. M. Diven, Secretary, 14 George St., Charleston, S. C.

June 15-19.

International Association of Police Chiefs.—Annual convention, Buffalo, N. Y.—Maj. Richard Sylvester, President, Washington, D. C.

July 6-9.

American Society of Civil Engineers.—Annual convention, Mount Washington Hotel, Bretton Woods, N. H.—Charles Warren Hunt, Secretary, 220 West 57th street, New York, N. Y.

November 9-11.

American Society of Municipal Improvements.—Annual convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.

PERSONALS

ARMSTRONG, JAMES C., Hudson, N. Y., has been elected Mayor over Judge J. Rider Cady.

BRIGGS, G. A., Elkhart, Ind., has resigned as a member of the Board of Public Works, to give his entire attention to private affairs.

CLARK, WILLIAM MONROE, City Treasurer of Mishawaka, Ind., for 36 years, died March 16, aged 74 years.

DAVIS, HOWELL A., Palatka, Fla., has been nominated for Mayor for the 1909-10 term; he has no opposition, and is certain of election.

GREENE, GEORGE S., JR., New York, N. Y., and Henry S. Adams, of Boston, Mass., have been retained by the City of Newark, N. J., to pass on the report of the Advisory Commission on Docks and Meadow Reclamation.

HARRIS, C. H., Aberdeen, S. D., A. E. Boyd, C. F. Easton, Dr. Carl Forsum and S. C. Hedger have been appointed Park Commissioners by Mayor Aldrich to serve until July 1, when a new park law takes effect.

INMAN, GILBERT S., Captain in the Fire Department, Providence, R. I., has been appointed Assistant Superintendent of the Fire Alarm Telegraph, succeeding Capt. Arthur D. Sayward, resigned.

KELLY, JOHN L., Atlantic City, N. J., a member of the Philadelphia bar, has been appointed special counsel by the Council of Atlantic City in the negotiations for the acquisition of a large portion of the beach front at a possible cost of \$2,000,000, and will serve without pay.

LOWER, ELTON, Chicago, Ill., has been appointed by Mayor Busse as chairman of the commission to regrade and reclassify the civil service. Other members are: Aldermen Bennett, Foell, O'Connell, Finn and Snow, Otto C. Schneider, John J. Hanberg, Col. Henry S. Dietrich, Charles G. Dawes, Walter H. Wilson, B. E. Sunny.

MODJESKI, RALPH, Chicago, consulting bridge engineer, and Mr. J. Waldo Smith, chief engineer of the Board of Water Supply, New York City, have been elected members of the Institution of Civil Engineers.

MOTT, FRANK K., Oakland, Cal., has been elected Mayor for the third time. Frederic C. Turner has been re-elected City Engineer.

PENDLETON, B. H., Oakland, Cal., has been elected President of the City Council.

PITCHER, SAMUEL H., for the past thirteen years assistant engineer in the office of the city engineer of Worcester, Mass., has resigned and has opened an office at 418 Main street, Worcester, for conducting a general consulting engineering practice.

REED, CHARLES ARTHUR, Corporation Attorney of Plainfield, N. J., for 21 years, has resigned.

ROGERS, F. B., New York City, has resigned as consulting engineer of the Newburgh, N. Y., water board.

SANDERSON, CHARLES C., Clinton, Mass.,

has been appointed Chief of Police, succeeding Thomas Murphy.

SAYWARD, CAPT. ARTHUR D., Providence, R. I., superintendent of the Fire Alarm Telegraph, has been retired on account of ill health.

SLOCUM, CHARLES M., Springfield, Mass., has been re-elected City Engineer.

STEERE, GEORGE A., Providence, R. I., Chief Engineer of the Fire Department, will be retired on April 1. He is to be succeeded by Deputy Chief Engineer Holden O. Hill.

STRATTON, FRANK, Louisville, Ky., has been appointed City Auditor, succeeding John H. Miller, resigned.

TODD, DR. FRANCIS H., Paterson, N. J., has been appointed member of the Board of Health, succeeding the late John R. Hurley.

WEATHERS, E. B., Elkton, Ky., has been elected Mayor.

WHITON, DR. ROSS K., Quincy, Mass., has been appointed Inspector of Milk, by Mayor Shea, vice Dr. William G. Curtis, resigned.

WILLIAMSON, J. M., Moundsville, W. Va., has been elected Mayor.

WILSON, W. F., Halls, Tenn., has been elected Mayor.

WINCHESTER, ALBERT E., South Norwalk, Conn., has been mentioned as a candidate for membership in the proposed Connecticut Public Service Commission. Mr. Winchester is general superintendent of the City of South Norwalk Electric Works, with which he has been connected in various capacities since 1892. He is also president of the Water and Electric Company of Westport, Conn. The work for which he is best known is that as one of the twenty-one commissioners sent to England by the National Civic Federation to study the question of municipal ownership and operation of public utilities.

The following have been chosen Presidents of Town Councils in Pennsylvania:

Bridgeport, John Cronin.
Girardsville, Thomas McDonald.
Yardley, Aaron L. South.
Conshohocken, Dr. J. Quincy Thomas.
Norristown, Ambrose E. Umstead.
Bethlehem, E. J. Krause.
South Bethlehem, A. H. Gross.
Hellertown, Jacob Ruthardt.
Pottsville, Kimbec C. Wilson.
Freemansburg, W. Blon Frithman.
Mahanoy City, Harry S. Megle.
Shenandoah, M. J. Mulahey.
Pottstown, Lewis R. Saylor.
Hanover, Lewis I. Schultz.
Media, Henry L. Broomall.

The following Road Supervisors in Butler County, Pa., elected in February, have taken office in various townships, as follows:

Adams, Wm. Marburger, T. D. Kennedy.
Allegheny, E. M. Blair.
Brady, John Thompson.
Buffalo, C. Ferne.
Butler, Henry Fry.
Center, A. Pollock, L. Stoughton.
Cherry, W. D. Bovard.
Clay, J. C. Albein.
Clearfield, John Sweeney.
Clinton, John Harvey.
Concord, Thos. Graham.
Connoquenessing, O. W. Hays.
Cranberry, F. C. Meeder.
Donegal, Patrick Norris.
Fairview, R. J. McCullough.
Franklin, Wm. Stephenson.
Jackson, Samuel Ramsey.
Forward, Jacob Dambach.
Jefferson, L. Welsh, A. Maurhoff.
Lancaster, Jesse Rice.
Marion, James Duff.
Mercer, W. H. Williamson.
Middlesex, James Wilson.
Muddy Creek, E. J. Moore, G. Burtrim.
Oakland, August Filgus.
Parker, D. L. Bowser, D. Kunselman.
Penn, James Douthett, Samuel Ziegler, F. B. Dodds.
Summit, A. J. Portman.
Venango, J. McNamee, M. Boyce.
Worth, O. G. Pisor, J. Drake.
Washington, Norman Glenn.
Winfield, C. B. Noble.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage
Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation
Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
South Carolina	Lancaster	Apr. 1	Furn. standard 10-ton roller; portable rock crusher, 600-ton cap, in 5-hour run, with 25-yard bin on wheels, rotary screen and elevator, complete; road machine, reversible blade; road floor; also crusher, roller and traction engine to sell.	L. G. Mobley, Supervisor.
New Jersey	Newark	Apr. 1, 3:30 p.m.	Grading, curbing and flagging, 8 streets, inc. excavating, etc.	M. R. Sherrard, Ch. Engr. St. & W. Bd.
North Carolina	Canton	Apr. 1	Bldg. 1-2 mile brick or bitulithic and 1 mile macadam road.	J. N. Pease, Mayor.
North Dakota	Mandan	Apr. 1, noon	Bldg. cement and board sidewalks during 1909.	E. A. Ripley, City Auditor.
Ohio	Warren	Apr. 1, 1:30 p.m.	Constructing about 8 miles of improved roads.	J. M. Dunbar, Chm. Com'rs Roads, District No. 1.
Michigan	Grand Rapids	Apr. 1, 8 p.m.	Grading and paving, S. Commerce St. to Wealthy St.	Saml. A. Freshney, Gen. Mgr. B.P.W.
Michigan	Detroit	Apr. 1, 2 p.m.	Constructing cement road 1 mile long, Woodward Ave.	Edw. N. Hines, Chm. Co. R'd Com'rs.
Illinois	Highland Park	Apr. 1, 2 p.m.	Grading, curbing, paving, and otherwise improving 3 streets.	Alex Robertson, Pres. Bd. Loc. Imp.
Arkansas	Little Rock	Apr. 1, 2 p.m.	Paving sheet asphalt on concrete, 20,080 sq. yds.; cost, \$85,000.	E. A. Kingsley, Engr., Imp. Dist. 141.
North Dakota	Cassellton	Apr. 1	Bldg. sidewalks of all kinds during year.	B. D. Youlls, City Auditor.
Ecuador, S. A.	Guayaquil	Apr. 1	Bldg. concrete sidewalks, macadam roads and sewers.	Ecuadorian Legation, Wash., D. C.
Louisiana	New Orleans	Apr. 1	Improvements on New Basin Canal and Shell road, including rebuilding levee; cost, \$105,000.	Walter C. Murphy, Levee Board.
New York	Newburgh	Apr. 1, 5 p.m.	Improving South West St.; cost, \$42,000.	Wm. J. Blake, City Engineer.
North Dakota	Aneta	Apr. 1, 6 p.m.	Constructing cement sidewalks.	Theo. W. Peterson, City Auditor.
Ohio	Cincinnati	Apr. 2, noon	Improving Princeton pike; specifications, No. 808; \$5,000 bond.	Stanley Struble, Pres. Co. Comrs.
New York	Little Falls	Apr. 2, 10 a.m.	Paving, any hard material, 6,400 sq. yds. on concrete, 2 sts.	Dennis B. Reardon, Clk. Bd. P. Wks.
Minnesota	Jackson	Apr. 2, 11 a.m.	Bldg. 8,690 sq. ft. cement walks, 486 ft. steps, 920 ft. curb.	P. D. McKellar, County Auditor.
Oklahoma	Enid	Apr. 2	Bldg. 1,500 ft. 8-in. and 1,100 ft. 6-in. vit. pipe sewer, etc., Dist. No. 9.	E. R. Lee, City Clerk.
Pennsylvania	Lansdowne	Apr. 2	Furnishing 13,000 tons 1 1-2 to 3-4-in. stone and screenings.	John W. Davis, 142 W. Balto. Ave.
Washington	Port Townsend	Apr. 2, 2 p.m.	Clearing, grading, draining, etc., State Aid Road, No. 41.	Jos. M. Snow, State Hwy. Bd., Olympia.
North Dakota	Oakes	Apr. 5	Bldg. all sidewalks and crosswalks during year.	W. W. Denning, City Auditor.
Ohio	Cincinnati	Apr. 5	Furn. 300 tons refined asphalt for streets and sewers.	John J. Wenner, Clk. Bd. Pub. Serv.
Massachusetts	Boston	Apr. 5, noon	Earth grading, 3,500 cu. yds.; 1,150 ft. 10-in. and 100 ft. 24-in. vit. pipe, 500 cu. yds. loam surfacing, furn. 3,000 cu. yds. loam; 14,000 sq. yds. roadway and 5,200 yds. walk surfacing, etc.	J. R. Rablin, Engr., Met. P'k. Com.
Alabama	Montgomery	Apr. 5	Laying hexagon tile or Schilling pavement, granite curb, etc., 5 sts.; also clay-gravel roadway for 1st Ave., curb, sewer, etc.	Robert Tait, City Treasurer.
Pennsylvania	Chester	Apr. 5, 10 a.m.	All brick and cement sidewalks and curb in 1909.	Wm. H. Dempster, Chm. Sidewalk Committee.
Iowa	Des Moines	Apr. 5, 10 a.m.	Bldg. and reldg. cement and brick sidewalks and driveways.	Geo. F. Poorman, City Clerk, House Commission.
Indiana	Hartford City	Apr. 5, 10 a.m.	Bldg. macadam roads, 10,630 ft. 13,282 ft. and 5,255 ft. long.	L. W. Dougherty, County Auditor.
Indiana	Crown Point	Apr. 5, noon	Constructing gravel road in Ross Township.	Chas. A. Johnson, County Auditor.
Minnesota	Duluth	Apr. 5, 10 a.m.	Paving, grading, concrete work, etc., site new Court House.	Geo. H. Claypool, Sec'y Court
Illinois	Downers Grove	Apr. 5, 8 p.m.	Constructing brick pavement in Washington street.	J. S. Lozier, Village Engr.
North Dakota	Langdon	Apr. 5, 3 p.m.	Constructing sidewalks during year 1909.	John Sheehan, City Auditor.
North Dakota	Lidgerwood	Apr. 5, 8 p.m.	Bldg. sidewalks, crosswalks or crossings during year.	F. W. Mashek, City Auditor.
North Dakota	Mayville	Apr. 5, 8 p.m.	Laying various kinds of sidewalks during 1909.	M. J. Borden, Mayor.
New Jersey	Perth Amboy	Apr. 5, 8:30 p.m.	Grading & curbing Paterson St., from Brighton to Madison ave.	Geo. M. Adair, St. Com'r.
Kansas	Lawrence	Apr. 5, 5 p.m.	Brick paving, 7,775 sq. yds.; curbing, 4,393 ft.; excav., 3,900 cu. yds. 4 streets.	F. D. Brooks, City Clerk.
North Dakota	Fargo	Apr. 5, 5 p.m.	Constructing sidewalks during year.	N. C. Morgan, City Auditor.
Pennsylvania	Ingram	Apr. 5, 5 p.m.	Grading, curbing and paving Prospect Ave.; grading Stanley St.	D. H. Hainer, Boro. Clerk.
Washington	Olympia	Apr. 5	Paving five streets; cost, \$96,000.	J. R. Dever, City Clerk.
Indiana	Decatur	Apr. 5, 10 a.m.	Constructing macadam road in Root township.	H. S. Michaud, County Auditor.
Indiana	Greenfield	Apr. 5, 2 p.m.	Grading, macadamizing, etc., road in Buck Creek township.	Chas. H. Troy, County Auditor.
Indiana	Columbus	Apr. 5, 10 a.m.	Constructing gravel road, 7,953 ft. long, Flatrock twp.	John M. Davis, County Auditor.
Alabama	Lafayette	Apr. 5, noon	Grading preliminary to building road from city to Lanett.	A. J. Driver, Jr., Probate Judge.
Ohio	Wauseon	Apr. 5, 11 a.m.	Bldg. stone or gravel roads, etc. Roads No. 54, 58, 59 and 64.	J. E. Merrill, County Auditor.
Indiana	Danville	Apr. 5, 10 a.m.	Bldg. 15,565 ft. gravel road in Middle, and 12,145 ft. Center twp.	Wm. H. Nichols, County Auditor.
Minnesota	St. Paul	Apr. 5, 10 a.m.	Improving Bald Eagle Lake Ave., macadam, etc.	Edw. G. Krahmer, County Auditor.
Louisiana	Harrisonburg	Apr. 5, noon	Building 4 1-2 miles road near Trinity.	E. A. Guss, Jonesville.
Wisconsin	Appleton	Apr. 5	Reinforced concrete sidewalks to cost \$2,000.	E. L. Williams, City Clerk.
Mississippi	Greenville	Apr. 5, noon	Furn. galvanized iron pipe, 8 to 36-in. diameter, 1 to 4 car loads.	W. W. Miller, Clk. Bd. Supervisors.
Ohio	Berea	Apr. 5, noon	Grading, paving, curbing, draining, Beech and E. Grand Sts.	O. R. Stone, Village Clerk.
Indiana	Delphi	Apr. 5, noon	Grading, graveling or macadamizing, etc., certain roads.	M. G. Hann, County Auditor.
Indiana	Logansport	Apr. 5, noon	Bldg. Dykeman gravel road in Tipton township.	Geo. W. Cann, County Auditor.
Ohio	Bowling Green	Apr. 5, 1 p.m.	Grading and macadamizing 2 roads, 6 1-4 and 8 1-3 miles long.	F. W. Toan, County Auditor.
Indiana	Salem	Apr. 5, 1:30 p.m.	Bldg. 2 roads; 13,357 and 21,587 ft. long.	Samuel G. Ellis, County Auditor.
North Carolina	Graham	Apr. 5, 3 p.m.	Bldg. 45 miles macadam roads; graded 28 ft. wide, pave 10 ft.	Gilbert C. White, C. E., Durham.
New York	Newburgh	Apr. 5, 5 p.m.	Granite block paving on Water St.	D. J. Coutant, City Clerk.
North Dakota	Jamestown	Apr. 5, 8 p.m.	Bldg. stone or concrete sidewalks during year.	G. E. Lyman, City Auditor.
Illinois	River Forest	Apr. 5, 8 p.m.	Asphalt and macadam paving, cement curb and gutter, 2 sts.	F. B. Klock, Pres. Bd. Local Imp.
Maryland	Frederick	Apr. 5, noon	Furn. and laying 10,360 sq. yds. vit. clay block on concrete; 5,060 ft. new granite curb; reset old curb; 2,880 ft. sewer pipe, etc.	Geo. Ed. Smith, Mayor.
Ohio	Mt. Gilead	Apr. 5	Furnishing iron culvert pipe for Morrow County.	W. C. McFarland, Co. Auditor.
North Dakota	Cando	Apr. 5, 8 p.m.	Constructing cement and tile sidewalks.	H. D. Shinner, City Auditor.
North Dakota	Devils Lake	Apr. 5	Sidewalk construction in tile or soft walk.	Ole Skratass, City Auditor.
North Dakota	Ellendale	Apr. 5, 8 p.m.	Constructing cement sidewalks and crossings.	John King, City Auditor.
New Jersey	Irvington	Apr. 6, 8 p.m.	Grading Florence Ave., flagging and reflagging Coit Ave.	M. Stockman, Town Clerk.
Indiana	Fowler	Apr. 6, 1 p.m.	Bldg. 3 stone roads: \$9,000, \$5,360 and \$4,000; 2 gravel, \$6,312 and \$9,710.	Lemuel Shipman, County Auditor.
Indiana	Rushville	Apr. 6, 2 p.m.	Bldg. 2 gravel roads, 13,610 and 15,624 ft. long; macadam, 65,497 ft.	Jesse M. Stone, County Auditor.
Minnesota	Virginia	Apr. 6	Furn. and delivering 10-ton steam road roller.	Albert E. Bickford, City Clerk.
New York	Niagara Falls	Apr. 6	Paving Linwood Ave.; cost, \$20,461; W. D. Robbins, City Eng.	Anthony C. Douglass, Mayor.
New York	New York	Apr. 6, noon	Regulating, paving, bldg. gutters, etc., in Richmond Boro.	Geo. Cromwell, Pres. Boro. Richm'd.
Indiana	Crawfordsville	Apr. 6, 10 a.m.	Constructing Ham gravel road in Ripley township.	B. B. Engle, County Auditor.
Indiana	Vincennes	Apr. 6, 2 p.m.	Constructing 6,070 ft. gravel road in Vigo township.	John T. Scott, County Auditor.
Ohio	Struthers	Apr. 6, noon	Furn. material and bldg. sidewalks, gutters, and intersect. in 1909.	K. L. Creed, Village Clerk.
Ohio	East Cleveland	Apr. 6, noon	Brick and asphalt paving, curbing, draining, etc.	Kline Fleet, Village Clerk.
Indiana	Valparaiso	Apr. 6, noon	Bldg. Wahl road, 2.27 miles long; Stinchfield road, 1,910 ft. long.	Stephen P. Corboy, County Auditor.
Indiana	Sullivan	Apr. 6, noon	Constructing two roads in Curry township.	Ben. C. Crowder, County Auditor.
Indiana	Washington	Apr. 6, 2 p.m.	Constructing O. M. Albright et al gravel road in Steele twp.	Thomas Nugent, County Auditor.
Kansas	Paola	Apr. 6, 6 p.m.	Constructing sidewalks during year.	E. D. McLaughlin, City Clerk.
Iowa	Le Mars	Apr. 6, 8 p.m.	Cement sidewalks, approaches, gutters, etc., for 1 year.	D. N. Hoffman, City Clerk.
Pennsylvania	Butler	Apr. 6, 8 p.m.	Grading, paving and curbing Second and Oak streets.	H. E. Coulter, Sec'y Town Council.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESSES INQUIRIES TO
STREET IMPROVEMENTS—Continued				
New Jersey	Bayonne	Apr. 6, 8 p.m.	Concrete block paving, 7,100 sq. yds., curb, etc.; 8,000 yds. brick	W. C. Hamilton, City Clerk.
Indiana	Petersburg	Apr. 6, 2 p.m.	Bldg. 2 gravel roads, 2 3-4 and 3-4 miles long.	Frank R. Bilderbuck, Co. Auditor.
Indiana	Kokomo	Apr. 7, 10 a.m.	Constructing gravel road in Clay township.	A. B. Esterling, Co. Auditor.
Indiana	Muncie	Apr. 7, 10 a.m.	Bldg. 2 gravel roads in Delaware township.	J. E. Davis, Co. Auditor.
Indiana	Winamac	Apr. 7	Bldg. 2 gravel roads in Franklin and one in Tippecanoe twps.	E. E. Rees, Co. Auditor.
New Jersey	Atlantic City	Apr. 7, 11 a.m.	Grading and graveling Northfield and English Creek road.	E. D. Rightmire, County Eng'r.
Ohio	Cleveland	Apr. 7, 11 a.m.	Grading, draining, paving, South Woodland road; check \$1,000.	Wm. F. Black, County Auditor.
Ohio	Columbus	Apr. 7, noon	Brick or block or other substantial paving, curb, etc., 4 streets.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Kansas	Pittsburg	Apr. 7, 5 p.m.	Paving and curbing Locust st.; \$6,000 bond.	O. T. Jones, City Clerk.
Kansas	Independence	Apr. 7, 8 p.m.	Brick paving 42,000 sq. yds., five streets; 18,550 ft. concrete curb and gutter; 9,500 cu. yds. earth & 550 cu. yds. rock excav.	J. D. Kramer, City Clerk.
Mississippi	West Point	Apr. 7	Grading and graveling West Point and Palo Alto road.	L. J. Howard, Clk. Co. Supervisors.
Ohio	Cambridge	Apr. 8, noon	Furn. 28,296 sq. yds. vit. paving block for sundry streets.	Sarah Rainey, Sec'y Bd. Pub. Serv.
Indiana	Logansport	Apr. 8, noon	Constructing 5,280 ft. macadamized road in Jackson twp.	Geo. W. Cann, County Auditor.
Florida	Apalachicola	Apr. 8	Furn. 6 or 8-ton tandem or 10-ton 3-wheel roller, adaptable to driving machinery; also road machine and sprinkling wagon, new or second hand.	H. W. Morgan, City Engineer.
Indiana	Bluffton	Apr. 8, 10 a.m.	Bldg. gravel road, 2 twps.; stone roads, 3 twps.	O. D. Garrett, County Auditor.
Indiana	Noblesville	Apr. 9, 11 a.m.	Bldg. 2 gravel roads between Hamilton and Marion counties.	N. W. Cowgill, County Auditor.
Ohio	Napoleon	Apr. 9, 10 a.m.	Constructing eight road improvements, total 50 miles.	F. J. Beck, County Auditor.
Ohio	Toledo	Apr. 9, 10 a.m.	Labor and material for repairing Detroit Ave. stone road.	County Surveyor.
Ohio	Delaware	Apr. 10, 10 a.m.	Grading, draining, macadamizing 5.58 miles of County road.	E. S. Mendenhall, County Surveyor.
Ohio	Dayton	Apr. 10, 10:30 a.m.	Grading, furn. crushed stone, screenings, etc., for improving 3 roads, one 3 1-2 and one 2 1-2 miles long.	Chas. W. Haines, Pres. Co. Com'rs.
Ohio	Cleveland	Apr. 10, 11 a.m.	Grading, draining and paving No. Woodland and Lee roads.	A. B. Lea, County Engineer.
Alabama	Decatur	Apr. 12, 10 a.m.	Constructing 27 1-2 miles of macadam roads in county; earth excav., 66,641 cu. yds.; rock culverts, dry masonry, 1,050 cu. yds.; crushed stone, 41,076 cu. yds.	Bullen & Boyd, Engrs., care Co. Com'r's.
Iowa	Webster City	Apr. 12, 7:28 p.m.	Brick block paving 25,000 sq. yds.	P. M. Banks, City Clerk.
New Jersey	Audubon	Apr. 12, 8 p.m.	Constructing concrete sidewalks on a number of streets.	E. W. Cobb, Borough Clerk.
Virginia	Boydton	Apr. 12	Constructing about 13 miles of road.	R. T. Gordon, Chm. Committee.
New Jersey	Trenton	Apr. 13, 2:30 p.m.	Macadamizing, road metal, grading, etc., No. Crossroadw.	W. Scott Taylor, Dir. Bd. Freeholders.
New Jersey	Freehold	Apr. 14, 11 a.m.	Bldg. gravel road 3 3-4 miles long, from Allentown.	Peter Forman, C.E., Englishtown.
Pennsylvania	Shamokin	Apr. 14	Brick paving on 6-in. concrete 8 sts.; asphalt 2 sts.	W. H. R. Smith, Chief Burgess.
Ohio	Byesville	Apr. 15, noon	Vit. brick or asphalt paving, 15,898 sq. yds., grading, curbing, draining several streets.	Elmer E. Green, Village Clerk.
Iowa	Marengo	Apr. 15	Paving ten city blocks with brick.	City Council.
Ohio	Cincinnati	Apr. 16, noon	Repairing Springfield pike and Zion road; bond \$1,000 each.	Fred Driehs, County Clerk.
Wisconsin	Tomah	Apr. 16, 1 p.m.	Constructing brick pavements.	D. J. Aller, City Clerk.
Wisconsin	La Crosse	Apr. 17, 2 p.m.	Brick paving 6,643 sq. yds.; concrete driveways, 300 sq. ft. on 6-in. concrete; grading, 3,403 cu. yds.; cement curb and gutter, 3,633 lin. ft.; concrete headers, 170 lin. ft.	H. J. Beckwith, Chm. Bd. Pub. Wks.
Wisconsin	Racine	Apr. 17, 10 a.m.	Paving Freeman Court from Milwaukee ave. to Chestnut st.	P. H. Connolly, Chm. Bd. Pub. Wks.
Ohio	Cleveland	Apr. 17, 11 a.m.	Grading, draining and paving Center road No. 3.	Wm. F. Black, Clk. County Com'rs.
New York	Fulton	Apr. 19, 8 p.m.	Trap rock macadam paving, 32,000 sq. yds.; vit. brick, 7,750 sq. yds.; cement curb, 18,600 ft.; 10 to 20-in. sewer 4,800 ft.	W. A. Harrison, City Clerk.
Ohio	Mt. Healthy	Apr. 20, noon	Constructing cement sidewalks on sundry streets.	Frank Williamson, Village Clerk.
Wisconsin	Lakemills	Apr. 20	23,000 sq. yds. tar or asphalt macadam, 6,000 ft. curb & gutter.	W. G. Kirchoffer, C.E., Madison.
Dist. of Col'bia	Washington	Apr. 26	Constructing sewer in Fourteenth St., S. E.	Asa Phillips, Supt. of Sewers.
Hawaii	Lihue	May 1	Furn. traction engine and macadam traction cars, f.o.b. steamer.	J. H. Moragne, Engr. Kauai County.
South Dakota	Aberdeen	May 3	Constructing sidewalks.	F. W. Raymond, City Auditor.
WATER SUPPLY				
Texas	Houston	Apr. 1	Sinking artesian well, 100,000-gals. per day, good for domestic purposes, at San Jacinto State Park; first class work.	W. C. Day, care Union Bk. & Tr. Co.
North Carolina	Canton	Apr. 1	Constructing water system, etc., for city.	J. W. Scott, Town Clerk.
Nebraska	Litchfield	Apr. 1	Constructing \$10,500 water works.	R. P. Moore, Village Clerk.
Michigan	Elkton	Apr. 1, 7 p.m.	Bldg. w. w. system, complete; engine, pump, tank, pipes, etc.	W. L. Doyle, Village Clerk.
Wisconsin	Platteville	Apr. 2, 7:30 p.m.	Furn. and install. pumping systems for 2 wells, air lift apparatus, deep well turbine pumps, driven by steam engines or steam turbines, and deep well power pumps, steam driven.	P. D. Hendershot, City Clerk.
Massachusetts	Everett	Apr. 2	Furnishing water pipe and special castings.	Wm. J. Brickley, Chm. Bd. Pub. Wks.
Wisconsin	La Crosse	Apr. 2	Water extensions, numerous sts.; 19,768 ft. 12 and 6-in. pipe.	H. J. Beckwith, Chm. Bd. Pub. Wks.
Illinois	Silvis	Apr. 3, 2:30 p.m.	Mat. and labor for 3 1-3 miles of water mains and sewers.	George Sletch, Sec'y Bd. Local Imp.
New Jersey	Lyndhurst	Apr. 5, 8:30 p.m.	Distributing and laying water pipe, specials, hydrants, etc.	R. M. Watson, Tp. Engr., Rutherford.
Indiana	Thornton	Apr. 5, noon	Constructing water works system and sewers for city.	Gen. Anson Mills, U. S. Army.
Indiana	Salem	Apr. 5, 7 p.m.	Extending water works, inc. pipes for mains from Skull Springs to reservoir; gasoline engines and pumps; stone reservoirs, excavation and laying pipes, etc.	Eugene Routh, Town Clerk.
Nebraska	Kimball	Apr. 5	Constructing water works system.	Will J. Davis, Village Clerk.
Florida	Jacksonville	Apr. 5, 3 p.m.	Furn. 2 motor-driven cent. pumps, 2,000-gal. per min. each, of 175 lbs. pressure; alt. bids for 2 pumps of 2,500 gal. each.	Bron. H. Barnett, Pres. W.W. Trus.
Wyoming	Cheyenne	Apr. 5, 2 p.m.	Furn. 10,000 tons, c. i. pipe; 200 tons pig lead; 15 tons jute oakum, all f.o.b. Omaha, or other Union Pac. Ry. points.	C. C. Carlisle, City Engineer.
New Jersey	Woodbury	Apr. 6	Furn. 16,000 ft. 16-in. pipe, 2 tons specials; eight 16-in. stop valves; also laying c. i. pumping main from pump. sta. to reser.	City Council.
New Jersey	Belleville	Apr. 6, 8:30 p.m.	Furn. and laying 753 ft. 6-in. pipe, 2 hydrants, 3 gate-valves.	J. W. Hirdes, Chm. Twp. Com.
New Jersey	Bayonne	Apr. 6, 8 p.m.	Labor and material for water extension No. 584, including 40 tons 6 and 8-in. c. i. pipe, 32 hydrants, etc.	F. W. Dalrymple, City Engineer.
South Dakota	Canistota	Apr. 6	Constructing water works system.	J. A. McKinnon, Town Clerk.
New York	New York	Apr. 6, 11 a.m.	Contracts 17 and 18; 14,000 and 15,600 ft. plain concrete conduit, 17x17 1-2 ft. cut-and-cover aqueduct.	Bd. Water Supply, 299 B'way.
Mississippi	Jackson	Apr. 6, noon	Furn. 6,000,000-gal. high duty pumping engine, water pipe hydrants, valves and meters.	Hamilton Johnson, City Engineer.
Ohio	Swanton	Apr. 6, noon	Bldg. \$10,000 w. w. system.; Geo. Champe, C.E., Toledo.	Wm. B. Elwell, Sec'y Trus. Pub. Affs.
Arkansas	Lake Village	Apr. 6, 4 p.m.	Brick power house and pump pit; 300-gal. power pump, 30 h.-p. gasoline engine, etc.; 50,000-gal. steel tank on 125 ft. tower; 3 miles 4 to 8-in. mains, hydrants, valves, etc.	Lund & Hill, Engrs., Little Rock.
Louisiana	New Orleans	Apr. 6, 3 p.m.	Furnishing water meters and meter boxes.	Geo. G. Earl, Supt. Sew. & Wtr. Bd.
Texas	Greenville	Apr. 6, noon	Erection, etc., compound condensing pumping engine, surface condenser and other appliances for city.	J. W. Maxcy Co., C.E., Houston.
Colorado	Antonito	Apr. 7, noon	Constructing water works, 3 bids: excav. and backfilling; materials complete; laying pipe, setting valves, etc.	C. B. Sampson, City Engineer.
Saskatchewan	Weyburn	Apr. 7, 8 p.m.	Pipe laying, water tower, c. i. pipe, hydrants and valves.	Samuel Murray, Sec'y-Treasurer.
New York	New York	Apr. 8, 11 a.m.	Contract 46, Catskill Aqueduct, inc. 5 tunnels.	Board of Water Supply.
Ohio	Toledo	Apr. 8	Furn. f.o.b. cars, iron pipe, specials, valves, sluice gates, etc.	Reynold Voit, Sec'y Bd. Pub. Serv.
Wisconsin	Richland Center	Apr. 9	Furn. and laying 5,000 ft. 8 and 10-in. c. i. pipe; furn. specials, valves and hydrants; W. G. Kirchoffer, C.E., Madison.	R. Sutton, City Clerk.
Indiana	South Bend	Apr. 9, 10 a.m.	Furn. material and bldg. 1,000,000-gal. rein. concrete reservoir.	A. J. Hammond, City Engineer.
Virginia	Selden	Apr. 10	Erecting windmill, 10,000-gal. tank, 2 1-2-in. cypress 10-ft. wheel, 35-ft. galvanized tower, pump and regulator for 50-ft. well, with walkway and rail around tank, in Court House sq.	J. W. Coler, care Bd. Supervisors.
Nebraska	Fort Crook	Apr. 12, 1 p.m.	Sinking 10-in. tubular well to depth not over 200 ft.	Capt. Jos. F. Gohn, Q.-M.
Iowa	Eldora	Apr. 12, 7:30 p.m.	Furn. and installing complete deep well power pump head, 100 h.-p. open heater and purifier; steam boiler feed pump.	L. F. Brown, Chm. W.W. Com.
Iowa	Sioux City	Apr. 13, 7:30 p.m.	Constructing 2,600 ft. 8x10 ft. rein. concrete conduit; \$42,000.	A. A. Smith, City Clerk.
Virginia	Richmond	Apr. 14	Furn. gate valves, c. i. pipe, specials, double-nozzle 5 hydrants, valve boxes, meters, meter boxes, pig lead, wiping solder, brass work, hauling, laying and relaying granite or cobble-stone paving, cutting and refilling pipe trenches; repaving.	E. E. Davis, Supt. Water Works.
Indiana	Shirley	Apr. 15	Constructing \$25,000 water works system.	B. L. Burnett, Pres. Bd. Wks.
Montana	Harlem	Apr. 15, 2 p.m.	Bldg. water works system for Fort Belknap Indian Agency.	Com'r Indian Affairs, Wash., D. C.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
WATER SUPPLY—Continued				
Ontario.....	Fort Francis.....	Apr. 15, 8 p.m.....	Furn. material and bldg. water and sewerage works.....	W. H. Elliot, Town Clerk.
New York.....	New York.....	Apr. 16, 11 a.m.....	Bldg. Sections 17 and 18 of Catskill aqueduct.....	John A. Bensen, Pres. Bd. Wtr. Sup.
Ohio.....	St. Henry.....	Apr. 20.....	Bldg. water works system; Paul R. Murray, C.E., New Phila..	Wm. F. Schweiterman, Clk. Bd. Pub. Affairs.
Kansas.....	McPherson.....	Apr. 20.....	Furn. 6,000 ft. 6-in., 33-lbs.; 6,400 ft. 4-in., 22-lbs., standard cast-iron water pipe; 9,000 lbs. lead; 250 lbs. hemp; 15 hydrants..	Water and Electricity Dept.
New York.....	Rome.....	Apr. 21, noon.....	Laying 28,583 ft. 30-in.; 2,025 ft. 24-in.; 780 ft. 20-in. c. i. pipe; also furnishing valves and hydrants for line; Knight & Hopkins, Engrs.....	Harvey S. Bedell, Chm. W. & Sew. Bd
Ohio.....	Put-in-Bay.....	Apr. 22, noon.....	Constructing water works system.....	L. E. Schraidt, Village Clerk.
Kentucky.....	Willow.....	Apr. 23.....	Constructing 3 cisterns.....	U. S. Eng'r Office, Cincinnati, O.
Missouri.....	Sikeston.....	Apr. 26, 6 p.m.....	Constructing water works system.....	M. G. Gresham, City Clerk.
Arizona.....	Bisbee.....	May 4, 7 p.m.....	Furn. and erecting three 250,000-gal.-each steel tanks.....	Geo. S. Gage, City Clerk.
California.....	Petaluma.....	May 5, 7 p.m.....	Furn. and install pump, mach. for salt-water high-pressure sys..	City Clerk.
Philippine Is..	Manila.....	June 1, noon.....	Furnishing 7,000 tons c. i. pipe, hub and spigot; 56 tons 20-in. flexible joint and flange c. i. pipe; 2 tons flanged c. i. pipe; 200 tons c. i. specials; J. F. Case, Ch. Engr. Dept. Sewers & Water Com.....	H. L. Fischer, Sec'y Municipal Bd.
SEWERAGE				
Ohio.....	Sandusky.....	Apr. 1.....	Labor and material for Decatur St. sewer; also storm sewer....	B. J. McGory, Clk. Bd. Pub. Serv.
Texas.....	Galveston.....	Apr. 1, noon.....	Bldg. 1,450 ft. 3 ft. 2 in. by 6 ft. reinforced concrete drain, etc.; also 4,344 ft. 18, 24 and 30-in. vit. pipe sewer, 5 streets.....	A. T. Dickey, City Engineer.
Ohio.....	Portsmouth.....	Apr. 1, noon.....	Bldg. storm water sewer in two alleys.....	Martin W. McMahon, Clk. Bd. Pub. S.
Ohio.....	Sandusky.....	Apr. 1, noon.....	Bldg. storm sewer in Decatur street.....	B. J. McGory, Clk. Bd. Pub. Serv.
Ohio.....	Cleveland.....	Apr. 1, noon.....	Constructing sewers in portions of 20 streets.....	W. J. Springborn, Pres. Bd. Pub. Ser.
Ecuador, S. A..	Guayaquil.....	Apr. 1.....	Constructing reinforced concrete sewers, sidewalks, etc.....	Ecuadorian Legation, Wash., D. C.
Minnesota.....	Duluth.....	Apr. 2, 10 a.m.....	Extending Ninth Ave. storm sewer.....	D. G. Olson, Pres. Bd. Pub. Wks.
Ohio.....	Youngstown.....	Apr. 2, noon.....	Labor and material for laying sewer in Bellevue ave.....	W. H. McMillin, Clk. Bd. Pub. Serv.
Pennsylvania..	Williamsport.....	Apr. 2, noon.....	Bldg. storm sewer, 1st; house sewers, 3 streets.....	Oliver H. Young, Chm. Hwy. & Sewer Commission.
New Jersey....	Millville.....	Apr. 2, 7:30 p.m.....	Bldg. sewage disposal plant; \$2,000 check.....	Charles B. Neal, Chm. Sewer Com.
Oklahoma.....	Enid.....	Apr. 2.....	Bldg. 1,500 ft. 8-in., 1,000 ft. 6-in. pipe sewer, etc., Dist. No. 9..	E. R. Lee, City Clerk.
Colorado.....	Julesburg.....	Apr. 3, 10 a.m.....	Bldg. sanitary sewer system for Sanitary Dist. No. 1, inc. 22,500 ft. 8 to 15-in. pipe sewer; 648 ft. 12 and 16-in. c. i. pipe; 50 manholes, 10 flush tanks, 1,900 ft. 1-2-in. wrought iron water-service pipe.....	Mark Burke, Mayor.
Illinois.....	Silvis.....	Apr. 3, 2:30 p.m.....	Furn. material and laying 3 1-3 miles of sewers and 3 1-3 miles water main.....	H. G. Paddock, C.E., Moline.
Maryland.....	Frederick.....	Apr. 5, 10 a.m.....	Furn. and laying 1,370 ft. 24-in. vit. pipe sewer, 1,020 ft. 16-in. house connections, 490 ft. 12-in. catch basin connections, 19 catch basins, 4 manholes.....	Geo. Ed. Smith, Mayor.
Michigan.....	Muskegon.....	Apr. 5, noon.....	Bldg. certain sanitary sewers, Dist. 6; cost, \$12,235.....	Benj. H. Tellman, County Recorder.
Minnesota.....	St. Paul.....	Apr. 5, 2 p.m.....	Constructing 3 sewers.....	J. S. Grode, Pres. Bd. Pub. Wks.
Kansas.....	Lawrence.....	Apr. 5, 5 p.m.....	Constructing 2,100 ft. 8-in. sewers in 2 streets.....	F. D. Brooks, City Clerk.
Indiana.....	Thornton.....	Apr. 5, noon.....	Constructing sewers and water works system.....	Chas. Brossman, Union Tr. Bldg., Indianapolis.
Pennsylvania..	Darby.....	Apr. 5.....	Bldg. 10-in. t. c. sewer in Main st.; A. F. Damon, Jr., Boro. Engr.	A. N. Appleton, Chm. Sewer Com.
California.....	Ocean Park.....	Apr. 5.....	Furn. material for outfall sewer.....	Town Clerk.
Pennsylvania..	Oakmont.....	Apr. 5.....	Bldg. sewer, inc. 1,880 ft. 36-in. brick sewer, 330 ft. 18-in. pipe sewer, 5 manholes, grading 7,900 cu. yds.....	W. W. Kerr, Clk. Boro. Council
New Jersey....	Trenton.....	Apr. 6.....	Bldg. drain in N. Y. ave. and across lands of several Companies..	Harry B. Salter, City Clerk.
Pennsylvania..	Dunmore.....	Apr. 6, 8 p.m.....	Bldg. Sec. A of sewer system, inc. sewers on 2d, 3d and 4th sts..	Chas. H. Genter, Sec. Boro Council.
Illinois.....	Farmer City.....	Apr. 6, 2 p.m.....	Bldg. 2 miles combined sewer.....	C. D. Rock, Pres. Bd. Local Improv.
Washington....	Port Townsend..	Apr. 6, 4 p.m.....	Bldg. 8 2-3 miles of sewer, inc. manholes, flush tanks, etc.....	George Anderson, City Clerk.
New York.....	Ossining.....	Apr. 6, 8 p.m.....	Constructing 2 sections of village sewer system.....	R. A. Ward, Village Clerk.
Georgia.....	Cedartown.....	Apr. 6, 7 p.m.....	Constructing 2 miles of sewers; S. S. Evans, City Engineer.....	J. B. Lacy, Street Commissioner.
Maryland.....	Baltimore.....	Apr. 7, 11 a.m.....	Bldg. sanitary sewers; Cont. 38 & 39; \$2,500 & \$2,000 checks..	J. Thomas Sewell, City Register.
New Jersey....	Kearny.....	Apr. 8.....	Laying sewer in portion of Beech St.; Harry P. Kremer, Engr.....	Town Council.
Washington....	Seattle.....	Apr. 9.....	Constructing sewers in Thornhyke ave. and other sts.; cost, \$154,000, including 51,390 ft. 8 to 24-in. pipe; 6,270 ft. oviform brick sewers, 24x36 to 30x45-in.; 1,000 ft. wooden box sewer, 21x24 in.; 4,000 ft. 6-in. side connections, 139 catch basins, etc.....	R. H. Thomson, City Engineer.
Ohio.....	College Hill.....	Apr. 12, noon.....	Bldg. sewage disposal plant, inc. grading, furn. broken stone, vit. and iron pipe, concrete, sand, manholes and bldg. super-structures for preliminary settling basins and filter beds, etc..	F. R. Strong, Village Clerk.
Iowa.....	Clinton.....	Apr. 13, 2 p.m.....	Bldg. sanitary sewer in Dist. No. 2.....	Wm. E. Hayes, City Clerk.
New Jersey....	Carlstadt.....	Apr. 15, 8:15 p.m.....	Bldg. sanitary sewer system and disposal plant, inc. 14 miles 8 to 9-in. sewers, and 14 miles of 6-in. house connections.....	George Zimmerman, Mayor.
Ohio.....	Circleville.....	Apr. 15, noon.....	Constructing sewage disposal plant at County Infirmary.....	County Commissioners.
Ontario.....	Fort Francis.....	Apr. 15, 8 p.m.....	Furn. material and bldg. sewerage and water works.....	W. H. Elliot, Town Clerk.
Oklahoma.....	McAlester.....	Apr. 15, 8 p.m.....	Bldg. sanitary sewers to cost \$76,001, and storm water sewers, \$25,447; also Sandy Creek improvement, cost, \$40,000, inc. excav., fill, revetment, concrete side walls and bottom, 6,093 ft. long.....	J. Phelan, City Engineer.
Wisconsin.....	La Crosse.....	Apr. 15, 2 p.m.....	Bldg. 8,651 ft. sewer, from 24-in. circular pipe to 32x72-in. egg-shaped reinforced concrete sewer; cost, \$73,909.....	A. J. Roberge, Supt. of Sewers.
Wisconsin.....	Oshkosh.....	Apr. 17, 2 p.m.....	Constructing sewers in sundry streets.....	W. A. Marden, Chm. Bd. Pub. Wks.
Indiana.....	Indianapolis.....	Apr. 20.....	Bldg. \$40,000 concrete, brick or pipe sewer in Miller St.....	Blaine H. Miller, City Engineer.
New York.....	Auburn.....	Apr. 20, 8 p.m.....	Bldg. 53,750 ft. 8 to 24-in. sewer in 5 to 20-ft. trench, to include 75,300 cu. yds. excav., 23,600 ft. 5-in. vit. tile house connections, 180 manholes, etc., as shown under "Proposals".....	W. Thomas Wooley, City Engineer.
Alabama.....	Birmingham....	Apr. 21, 11 a.m.....	Bldg. brick and concrete sewers, 7 sections, to cost about \$230,000; old bids, given Feb. 24 issue, rejected.....	Maury Nicholson, City Engineer.
Ohio.....	Columbus.....	Apr. 21, noon.....	Bldg. sewer pipe drain along W. Fifth avenue.....	F. M. Sayre, County Auditor.
Kentucky.....	Franklin.....	Apr. 21, 11 a.m.....	Constructing 5 1-2 miles pipe sewers, 46 manholes, 24 flush-tanks and one septic tank; C. E. Biggs, City Clerk.....	Granberry Jackson, C.E., Nashv., Tenn
Dist. of Col'bia.	Washington.....	Apr. 26, noon.....	Bldg. Luzon ave. trunk sewer and sewer in valley north of R St..	Maj. W. V. Judson, Eng'r Comr.
BRIDGES				
Oklahoma.....	Jenks.....	Apr. 1.....	Furn. and erecting steel bridge over Arkansas river; \$40,000....	Board County Supervisors.
Kansas.....	Westmoreland..	Apr. 1, 2 p.m.....	Bldg. 300 ft. steel approach to Stockdale bridge.....	H. G. Huckstadt, County Clerk.
Iowa.....	New Hampton....	Apr. 2.....	Constructing concrete bridges.....	F. N. Lentz, County Auditor.
Illinois.....	Chicago.....	Apr. 3, 11 a.m.....	Furn. material and shifting span at Lawrence ave. over North branch Chicago river; bldg. new supports; reldg. floor and approaches.....	John J. Hanberg, Com. Pub. Wks.
South Carolina.	Spartanburg....	Apr. 3, 10 a.m.....	Bldg. 30x20 ft. bridge at Apalache; wood or steel.....	D. M. Miles, Supervisor.
New Jersey....	Camden.....	Apr. 3, 11:30 a.m.....	Bldg. rein. concrete arch bridge over Pensauken Creek.....	J. I. Albertson, County Engineer.
Ohio.....	Cleveland.....	Apr. 3, 11 a.m.....	Sub. and paving, est. \$210,447; steel work, \$456,750 Co. bridge..	A. B. Lea, County Surveyor.
Florida.....	Starke.....	Apr. 5.....	Bldg. steel bridge, 1,226 ft. long over New river, nr. Lake Butler	C. L. Peek, Chm. Bd. Co. Comrs.
Ohio.....	Batavia.....	Apr. 5, noon.....	Bldg. concrete arch culvert at Boston; cost, \$1,225.....	County Auditor.
Mississippi....	Magnolia.....	Apr. 5.....	Bldg. bridge over Bogue Chitto riv.; also one over Tangipahoa..	W. C. Vaught, Clk. Co. Supervisors.
Wisconsin.....	Watertown.....	Apr. 5, 2 p.m.....	Bldg. rein. concrete girder bridge and abutments, Silver Creek..	Fred. C. Werner, Chm. Bd. Pub. Wks.
Ontario.....	Glen Oak.....	Apr. 5.....	Bldg. rein. concrete bridge at Caradoc.....	C. H. Lockwood, Tp. Clk., Mt. Bridges
North Carolina.	Graham.....	Apr. 5, 3 p.m.....	Bldg. 14 short rein. concrete bridges; 45 miles macadam road, etc.	R. L. Holt, Chm. County Comrs.
Louisiana.....	Harrisonburg....	Apr. 5, noon.....	Bldg. steel bridge at Bushley Bayou; also repairing one.....	H. W. Bethard, Clk. Police Jury.
Illinois.....	Marseilles.....	Apr. 5, 8 p.m.....	Bldg. 2 rein. concrete bridges, 27 and 28 ft. long, inc. abut. etc..	Daniel T. Hines, City Clerk.
Mississippi....	Greenville.....	Apr. 5, noon.....	Constructing steel bridge over Jackson Bayou at Isola.....	W. W. Miller, Clk. Co. Supervisors.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES—Continued				
Washington	Colfax	Apr. 5	Bldg. steel bridge 114 ft. long over Pine Creek, near Malden	Wm. M. Duncan, County Auditor.
Pennsylvania	Brookville	Apr. 5, noon	Bldg. steel super. and concrete substructure or rein. concrete arch; also 2 rein. concrete and stone bridges; Nos. 1, 2 and 3.	W. A. Kelly, County Clerk.
Virginia	Washington	Apr. 6	Bldg. 2 steel bridges, 140 and 80 ft. long in Rappahannock Co.	P. St. J. Wilson, Hwy. Comr. Rick, M.
Delaware	Dover	Apr. 6, noon	Bldg. steel and iron drawbridge over Letspic river at Letspic	S. W. Darby, Jr., Clerk of Peace.
Indiana	Albion	Apr. 6, 2 p.m.	Bldg. and repairing concrete culverts, bridges and abutments	John W. Earle, County Auditor.
Indiana	Boonville	Apr. 6, 2 p.m.	Constructing 21 steel or concrete bridges	Ray F. Cherry, County Auditor.
North Dakota	La Moure	Apr. 6, 2 p.m.	Bldg. steel and wood bridges ordered during year; also for furnishing 12 to 72-in. cor. galv. metal culverts during year	E. W. Field, County Auditor.
Indiana	Laporte	Apr. 6, 10 a.m.	Bldg. Spahr bridge and abutments in Hanna township	County Commissioners.
Ohio	Bryan	Apr. 6, 11 a.m.	Bldg. 8 steel bridges, 150 to 40-ft. spans; cost, \$5,798 to \$1,127; also 6 small concrete bridges, spans 12 to 25 ft.	H. M. Sharp, County Surveyor.
Ohio	Washington, C.H.	Apr. 6, 2 p.m.	Constructing bridges in various parts of County	H. D. Chaffin, County Auditor.
Georgia	Ellijay	Apr. 6	Bldg. double-track steel bridge, 1 span, 102 ft. long; also for 2 stone and cement piers or 30-in. steel tubular piers	T. H. Tabor, Ordinary, Gilmer, Co.
Indiana	La Grange	Apr. 6, noon	Building various bridges	B. D. Weaver, County Auditor.
Iowa	New Hampton	Apr. 6, 1 p.m.	Constructing 10 concrete bridges; bids whole or separate	F. N. Lentz, County Auditor.
Ohio	Cleveland	Apr. 7, 11 a.m.	Constructing concrete arch on Barrett road; Report No. 2234	A. B. Lea, County Surveyor.
Ohio	Dayton	Apr. 8, 11 a.m.	Bldg. sub. and superstructure bridge over Wolf Creek	Board of County Commissioners.
Kansas	Manhattan	Apr. 8, noon	Bldg. steel bridge over Fancy Creek. Centre township	Geo. H. Hungerford, County Clerk.
Manitoba	Winnipeg	Apr. 8, noon	Steel and concrete bridge and approach spans over Red river	P. E. Ryan, Com'r Transc. Rys., Ottawa.
Oklahoma	McAlester	Apr. 10, 5 p.m.	Constructing various bridges in the County	County Clerk.
Idaho	Sandpoint	Apr. 12	Bldg. \$15,000 bridge over Pend d'Oreille river at First st.	Ignatz Weil, County Auditor.
New Jersey	Camden	Apr. 12, 11 a.m.	Bldg. concrete hwy. bridge over Cooper's Crk.; also rebldg. one	Fred. W. George, Clk. Bd. Freeholds.
Ohio	Youngstown	Apr. 12, 11 a.m.	Bldg. masonry arch bridge over Bear's Den, Youngstown twp.	Will B. Toms, County Auditor.
New York	Slingerlands	Apr. 14, 10 a.m.	Bldg. 120-ft. span, 18-ft. concrete roadway, to carry 15 tons; also concrete piers and wings, to replace old bridge in Bethlehem	Geo. J. Coughtry, Town Clk., Bethl'm
Tennessee	Chattanooga	Apr. 15	Bldg. steel truss hwy. bridge over W. Chickamauga Crk., at Mills	E. E. Betts, C.E., 905 James Bldg.
Ohio	Cincinnati	Apr. 16, noon	Bldg. concrete bridge on Old State road; Spec. 870	Stanley Struble, Pres. Co. Comrs.
Ohio	Logan	Apr. 16, 1 p.m.	Bldg. concrete arch bridge, 115 ft. center to center long, 18-ft. roadway; also steel superstructure 150 ft. long; kreodone plank and block flooring	James L. Martin, County Auditor.
Ohio	Zanesville	Apr. 19, noon	Bldg. concrete girder highway bridge	L. E. Brelsford, County Auditor.
Ohio	Marietta	Apr. 20, noon	Bldg. sub. and superstructures of bridges, abutments, etc.	Washington County Commissioners.
New Brunswick	Fredericton	Apr. 25	Bldg. 4 metal spans, each 260 ft. long, pin-connection	John Morrissey, Dept. Pub. Wks.
Georgia	Savannah	May 3	Bldg. rein. concrete lock and bridge, Buckhalter Creek outlet	G. Reuben Butler, Clk. Co. Comrs.
LIGHTING AND ELECTRICITY				
Kansas	Fort Riley	Apr. 2, 10 a.m.	Extensions to lighting system, inc. 5 transformers	Capt. W. M. Whitman, Q.-M.
California	Chico	Apr. 2	Sale of franchise for right to erect poles and wires for transmission and sale of electric power to city, and inhabitants for 50 years; Frank C. Wilson for Sierra Power Co., petitioner	Board of City Trustees.
Pennsylvania	South Bethlehem	Apr. 5, 8 p.m.	Lighting sts., 1, 3, 5 yrs. from June 20, arcs and incandescents	James L. Elliott, Chm. Lamp Com.
Virginia	Richmond	Apr. 5	Furnishing 15 miles copper wire to Fire Alarm Dept.	W. H. Thompson, Supt. Fire Alarm.
Oklahoma	Muskogee	Apr. 5, 5 p.m.	Furnishing 22,000 lin. ft. 4-in. gas pipe	L. B. Kinsey, City Engineer.
California	Agnew	Apr. 7, 7 p.m.	Furn. and instal. conc. conduit, elec. wiring, etc., State Hospital	Bd. of Managers, Agnew State Hosp.
Dist. of Col'bia	Washington	Apr. 10	Furn. 50 miles, type 44, 100 miles, 45; 100 miles, 46 cable	Chief Signal Officer, U. S. Army.
Minnesota	Pine City	Apr. 10	Bldg. power plant for Pine City Power Co. to develop 600 h.-p., concrete buildings and 8 miles transmission wire	J. M. Allen, Engr., Pine City Pow. Co.
Ohio	Canton	Apr. 12, 10 a.m.	Furn. and installing 375-light plant in County Infirmary	M. W. Oberlin, County Auditor.
Virginia	Portsmouth	Apr. 13, 8 p.m.	Purchase of franchise and contract to light sts., public bldgs., residences, business houses and for furn. power; \$5,000 bond	L. P. Slater, City Clerk.
Manitoba	Winnipeg	Apr. 15, 11 a.m.	Furn. 2 testing transformers, one 300 k.w., at 80,000 volts, and one 200 k.w., at 200,000 volts, and control equipment	F. E. Cambridge, City Electrician.
Alberta	Medicine Hat	Apr. 30	Drilling a gas well for city	W. P. Morrison, City Engineer.
Tennessee	Ripley	May 10	Furn. engines, boilers, etc., and installing 15-ton ice plant	W. A. McCalhoun, Mgr. Light Co.
MISCELLANEOUS				
New Jersey	Newark	Apr. 1, 3:30 p.m.	Furnishing 8 two-horse steel frame street sweepers	C. M. Shipman, Gen. Supt. of Works.
New York	New York	Apr. 1, 3 p.m.	Furn. and erect, new stationary benches around music stand, Central Park; furn. and del. 500,000 sq. ft. clean grass sod; 540 cu. yds. clean white beach sand for playgrounds	Henry Smith, Pres. Park Bd.
New York	New York	Apr. 1, noon	Landscape work about bldgs. of College of City of New York	Bd. Trus., College City of New York.
South Carolina	Charleston	Apr. 1	Constructing 4,000 ft. concrete retaining wall and filling in 667,000 cu. yds. behind same with filling dredged from river	J. H. Dingle, City Engineer.
Pennsylvania	Lansdowne	Apr. 2, 8 p.m.	Removal of garbage for 1 year, begin July 1	John W. Davis, Boro. Secy.
Uruguay, S. A.	La Poloma	Apr. 2	Construction of harbor	Dept. of Pub. Wks., Montevideo.
New York	Yonkers	Apr. 5	Erecting 2 1-2-story fire house	Board of Contract and Supply.
Ohio	Waverly	Apr. 5, noon	Making maps of Pike County	O. E. Emory, County Auditor.
Kansas	Lawrence	Apr. 5, 5 p.m.	Furn. and driving 36 piles and placing 10,500 ft. b.m. planking	F. D. Brooks, City Clerk.
Rhode Island	Providence	Apr. 5, 11 a.m.	Bldg. dump scow to haul residue from precipitation tanks at Fields Point	Walter F. Slade, Com'r Pub. Wks.
Indiana	Lebanon	Apr. 5, 1 p.m.	Remodeling the County Jail	B. F. Herdrick, County Auditor.
Pennsylvania	South Bethlehem	Apr. 5, 8 p.m.	Collection and removal of ashes and garbage, 2 yrs. from May 7	Chas. H. Groman, Chm. Police Com.
Pennsylvania	Coraopolis	Apr. 5, 7:30 p.m.	Collection and disposal of garbage, for 1 yr. begin May 1	J. J. Burry, Chm. Pub. Safety Com.
New Jersey	Perth Amboy	Apr. 5, 8:30 p.m.	Removal of garbage and ashes for one year	Geo. M. Adair, Street Comr.
New York	New York	Apr. 6, noon	Bldg. rein. concrete retaining wall and other ferry approach work	Geo. Cromwell, Pres. Boro. Rich.
Texas	Beaumont	Apr. 6, 10 a.m.	Bldg. wharf 700 ft. long for city, to cost \$41,000	C. L. Scherer, City Engineer.
Tennessee	Chattanooga	Apr. 6	Steel, oak and mahogany furniture, fixtures, desks, files and shelving for new \$200,000 City Hall	H. F. Van Dusen, Chm. Bd. Pub. Wks.
Pennsylvania	Camp Hill	Apr. 6, 6 p.m.	Erecting new two-story fire house; K. Opperman, Architect	Geo. W. Kerr, Sec'y Fire Co. No. 1.
New Jersey	Bridgeton	Apr. 6, 7:30 p.m.	Furn. hook and ladder wagon; also hose reel and 400 ft. hose	Frank L. Hewitt, City Clerk.
Ohio	Lakewood	Apr. 7, noon	Collection of garbage for one year; begin April 15	B. M. Cook, Clk. Bd. of Health.
California	San Francisco	Apr. 8, 9:15 a.m.	Furn. labor and material for constructing Pier 36	W. B. Thorpe, Sec'y Harbor Comrs.
Ohio	Waverly	Apr. 12, noon	Making two township maps	O. E. Emory, County Auditor.
Mexico	Chihuahua	Apr. 14	152 steel frames and doors for Chihuahua Penitentiary	Alfred Giles, Arch., San Antonio, Tex.
New Jersey	Prospect Park	Apr. 15, 8 p.m.	Collecting and disposing of ashes and garbage, 1 yr. from May 1	Thomas Fraser, Boro. Clerk.
New York	New York	Apr. 15	Furn. petrol. motor hose wagon for Shanghai, China	Fearon, Daniel & Co., 69 Wall St.
Virginia	Richmond	Apr. 15, noon	Bldg. fifty-ton crematory or incinerator in brick building	Harry J. Cohn, Supt. St. Cleaning.
Manitoba	Brandon	Apr. 16, 4 p.m.	Supplying 1,000 to 2,000 bbls. Portland cement for year	Harry Brown, City Clerk.
Ohio	Columbus	Apr. 16, noon	Maps and tracings of Franklin County for real estate appraisal; 3 contracts: City of Columbus; Villages and suburban lots; Township acreage	F. M. Sayre, County Auditor.
New York	West Point	Apr. 16	Constructing garbage crematory	Quartermaster.
Tennessee	Nashville	Apr. 17, 10 a.m.	Furn. and delivering 700,000 ft. b.m. long leaf yellow pine lumber	Maj. Wm. W. Harts, U. S. Engrs.
Texas	Houston	May 1	Improving, etc., San Jacinto State Park, inc. wharf and pagoda and reinforced concrete keeper's residence	W. C. Day, care Union Bk. & Trus. Co.
Ohio	Columbus	July 15, noon	Bldg. concrete retaining wall; Contract No. 18, inc. 800 cu. yds. excav., 765 cu. yds. loam, 1 acre seeding, 220 sq. yds. sodding, 800 cu. yds. concrete, 2,000 lbs. twisted steel rods	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Illinois	Chicago	Sept. 15	Furn. voting machines up to \$100,000 value	Election Commissioners.

STREET IMPROVEMENTS

Bessemer, Ala.—City will expend \$30,000 on paving streets; material has not been selected.

Dothan, Ala.—Council is considering ordinance providing for issuance of \$20,000 bonds for street paving.

Mobile, Ala.—The Board of Public Works will expend \$5,300 for sidewalk improvements; Commissioner Schwartz has petitioned for the improvement of the Bienville Square; cost, \$250.

Tuscaloosa, Ala.—Council has ordered the paving of Queen City avenue.

Fort Smith, Ark.—The Fort Smith Supply and Construction Company will purchase a portable rock crusher.

Chico, Cal.—Citizens are urging the improvement of the unoccupied streets of the city; a \$35,000 bond issue is proposed. —J. T. Waterland, Temporary President Citizens' Association.

Oakland, Cal.—Council has ordered the grading and macadamizing of Athol avenue, Hopkins, Eighteenth, East Sixteenth and Fortieth streets; also adopted resolutions for macadamizing College avenue, Marshall street and Shafter avenue; plans were ordered for paving First street.

Pasadena, Cal.—Council is considering the improvement of West Colorado and Washington streets, Concordia court and Knowland lane; also the paving of Euclid avenue.

Pomona, Cal.—Property owners along Albarado street are urging the paving of that thoroughfare.

Sacramento, Cal.—City will pave U street from Fifteenth to Twenty-eighth street with asphaltum.

San Jose, Cal.—Council is considering the improvement of Third and Whitney streets.

Stockton, Cal.—San Joaquin County has voted to issue bonds in the sum of \$1,890,000 for the building of 238 miles of macadam roads.

Canyon City, Col.—The Fremont County Roads Association has asked a \$30,000 State appropriation for macadamizing a driveway between Fremont County points and Colorado Springs. —T. W. Jaycox, Denver, State Engineer.

Hartford, Conn.—Council has authorized the macadamizing of Pliny street and Prospect avenue.

Hartford, Conn.—The Board of Finance has acted favorably on appropriation for macadamizing Marlborough street and on an appropriation of \$31,500 for the extension of Church street.

Middletown, Conn.—City is considering the macadamizing of Main street at a cost of about \$100,000.

New Britain, Conn.—The Board of Public Works has asked for an appropriation of \$15,000 to pave Main street. —Edw. Weigand, President.

Torrington, Conn.—Superintendent of Streets H. O. Holcomb has been ordered to get estimates of the amount of special riveted steel pipe in place of stone culverts.

Waterbury, Conn.—The Board of Public Works has recommended the construction of sidewalks on Sylvan avenue; cost, \$19,000; and on North Summer street, cost \$1,000. Board of Aldermen has passed a \$100,000 bond issue for city improvements.

New Castle, Del.—The Legislature will pass a bill authorizing city to expend \$100,000 for paving and sewer purposes during the year. —Wm. A. Kimmey, Wilmington, City Engineer.

De Funiak Springs, Fla.—Citizens will vote, April 15, on a \$5,000 street and park improvement bond issue.

Fort Pierce, Fla.—St. Lucie County citizens will vote April 20 on \$150,000 road bond issue.

Perry, Fla.—Citizens have voted on \$15,000 bond issue for street improvements. —John C. Calhoun, Clerk.

Rockmart, Ga.—Council has decided to pave several streets.

Aurora, Ill.—North avenue residents are urging the paving of their street between Broadway and Jackson street.

Aurora, Ill.—Bids for the paving of Galena street are to be advertised at once.

Cairo, Ill.—W. B. Thistlewood, City Engineer, is preparing estimates for the paving of Sycamore street.

Chicago, Ill.—The Board of Local Improvements has decided to pave a portion of Adams street with creosoted block.

Quincy, Ill.—Neighbors in the vicinity of Thirtieth and Locust are anxious to have a mile or over of road opened in that neighborhood, from Thirtieth and Chestnut north to the railroad property, and most of the property owners have agreed to release their claims to the right of way in order to secure this much coveted and much needed thoroughfare.

Springfield, Ill.—The Board of Local Improvements has recommended the paving of a portion of Fourth street with brick.

Bloomington, Ind.—City is considering the paving of Bloomington street; material not yet decided.

Evansville, Ind.—Property owners on Green street have petitioned for the improvement of the street with asphalt and artificial stone sidewalk and curb.

Goshen, Ind.—Council is considering the paving of Third street with vitrified brick.

Indianapolis, Ind.—The Board of Public Works has ordered plans for the improvement of Layman avenue and the alley north of Tenth street.

Indianapolis, Ind.—The Board of Public Works has confirmed resolutions for the improvement of Dye and Chestnut streets, Kentucky, Barnes, Bolton and Arlington avenues; also ordered plans for cement walks on Crescent street.

Indianapolis, Ind.—The Indianapolis Motor Speedway Company will soon let contracts on bids for the construction of a speedway. —Carl G. Fisher, J. A. Allison and F. H. Wheeler, Directors.

Indianapolis, Ind.—Plans are being prepared for the Board of Public Works upon which bids will be asked for street improvements; cost about \$55,000. —B. H. Miller, City Engineer.

Indianapolis, Ind.—The Board of Public Works has confirmed a resolution for the improvement of Roosevelt avenue; also ordered plans for the improvement of Colorado and West Tenth streets.

Burlington, Ia.—City will lay about two miles of paved streets.

Council Bluffs, Ia.—City Engineer S. L. Etnyre is preparing preliminary plans for 30,000 square yards of brick paving. —A. W. Casady, City Clerk.

Sioux City, Ia.—Council has ordered brick block paving placed on Wall, Dace, Chambers and Leech streets. —G. Y. Skeels, City Engineer.

Leavenworth, Kan.—The Board of Commissioners has decided to grade and pave Ottawa street. —J. H. Kirmeyer, City Clerk.

Lexington, Ky.—The Board of Public Works has decided that every sidewalk that remains unimproved must be laid with concrete this year.

Louisville, Ky.—The Board of Public Works will receive new bids for \$11,000 worth of asphalt constructions.

Baltimore, Md.—The Board of Park Commissioners is urging another park loan; plans for a great boulevard, connecting Druid Hill and Gwynn's Falls Parks, and to be known as the Gwynn's Falls Boulevard, have been approved; George Weems Williams is preparing an ordinance making provision for it; boulevard is to be 120 feet wide and entering Druid Hill Park at the Liberty road and Reisterstown pike, and Gwynn's Falls Park near Mount Holly Inn, between Walbrook and Forest Parks, the intervening stretch will be through the estate of Alexander Brown, and will connect up with the improvements to be made about the new high-service reservoir at Forest Park; likewise contingent on the passage of another loan is the proposed boulevard connecting University Parkway with Clifton Park; all the ground necessary for this has been purchased; improvement will run east from the intersection of University Parkway and St. Paul street boulevard.

Baltimore, Md.—An application has been filed with the Commissioners for Opening Streets by E. B. Hunting for the widening of Saratoga street, between Gay and Holliday streets.

Baltimore, Md.—Mayor Mahool has recommended the extension and widening of Howard street.

Baltimore, Md.—Bids will be received by the Board of Awards until 11 a. m., March 31, for grading, curbing and paving various streets. —B. T. Fendall, City Engineer.

Easton, Md.—Citizens will vote on \$50,000 bond issue for street improvements.

Frederick, Md.—City and County will pave a portion of four city blocks surrounding the Court House; cost, about \$9,000.

Hagerstown, Md.—City will lay about 390,000 bricks this summer; if West Washington street is paved about 400,000 more will be needed.

Gloucester, Mass.—Storer F. Crafts, of Boston, is conferring with members of the Municipal Council on the matter of the reconstruction of the county road at West Gloucester to Rust's Island.

Haverhill, Mass.—Citizens have petitioned for numerous street improvements; Alderman Diamond will investigate all petitions.

Lawrence, Mass.—The Public Improvement Committee has decided to pave Essex street with wooden block; also recommended the paving of Hampshire street; cost, \$18,000; the paving of Hancock, Park and High streets; cost, \$303,872. —City Engineer Marble.

Worcester, Mass.—Council Street Committee has recommended the paving of two streets with granite blocks on concrete at an estimated cost of about \$9,600.

Bay City, Mich.—Council has ordered pavements on nine streets as follows: Fifth, McKinley, Monroe, Lincoln, Grant, Jackson, Madison, Sixth and State streets.

Cadillac, Mich.—The Board of Public Works will purchase 300 feet of hose for the Street Department.

Detroit, Mich.—The Council Streets Committee has recommended the purchase of a brick rattler, to cost about \$250, to aid Commissioner Haarer in testing brick.

Detroit, Mich.—Council Committee on Streets will allow an estimate of \$21,328 for repaving Alfred street.

Ishpeming, Mich.—Citizens will vote, April 5, on a \$20,000 expenditure per annum on the country road system.

Virginia, Minn.—Council has taken up the matter of making extensive improvements on its streets in the resident portion of the city and expect in the early spring to begin the building of macadam on several of the streets and alleys in the south of Chestnut street; City Clerk has advertised for bids for a 10-ton steam roller, and it is probable at a later meeting steps will also be taken to purchase a stone crusher.

Meridian, Miss.—The City Board will advertise for new bids for street paving; \$200,000 bond issue is available; old bids were rejected on account of doubt as to legality of bonds.

Silver Creek, Miss.—Town will purchase two-horse road machine. —F. B. Denson, Chairman of Committee.

Vicksburg, Miss.—Bids will be received by the Board of Supervisors of Warren County, April 5, noon, for the purchase of \$7,000 of 5 per cent. road and bridge bonds. —J. D. Laughlin, Clerk.

Helena, Mont.—Residents of the Sixth Ward have appointed a Committee to consider the matter of grading and enlarging Lindale Avenue Improvement District; cement sidewalks and drainage system will be built and Lindale avenue and other streets parked; cost, about \$65,000.

Omaha, Neb.—City officials plan to pave Galena street, Seminary and South avenues at practically the same time.

Kearny, N. J.—Citizens are discussing the proposed improvement of Davis avenue.

Newark, N. J.—The Board of Works has been asked to pass a resolution directing street openings through a tract of more than 300 acres in the Clinton Township annexed district; with the exception of a short distance in three of the proposed new streets, all the necessary property will be dedicated to the city by various land owners interested. —City Engineer Sherrerd.

Newark, N. J.—The Board of Street and Water Commissioners has decided to pave Delavan avenue and Arlington and South Sixteenth streets. —M. R. Sherrerd, Chief Engineer.

Newark, N. J.—City will expend \$500,000 this year for opening new streets and extending or widening some of the present thoroughfares; Board of Works has planned the following street improvements: Extension of Belmont avenue, from Clinton avenue to Alpine street; cost, \$25,000; widening of Clay street, from Broad street to the river; cost, \$75,000; extension of Clifton avenue, from Abington avenue to Second avenue; cost, \$20,000; widening of Treat place; cost, \$60,000; widening of Hawthorne avenue, from Hunterdon street to Clinton place; cost, \$12,000; extension of Orchard street, from Walnut street to Lafayette street; cost, \$60,000; extension of Lawrence street, under the Central Railroad elevation to Hamilton street; cost, \$80,000; extension of Elwood avenue, from Washington avenue to the river; cost, \$40,000.

Newark, N. J.—To provide for the widening of two streets and the opening of two others, the Finance Committee of the Board of Works has presented to the Board a resolution calling on the Common Council to make an appropriation of \$180,000; streets to be widened are Treat place, for which \$60,000 is asked, and Clay street, from Broad street to the Passaic River, which is to cost \$75,000; streets to be opened are Clifton avenue, for which \$20,000 is asked, and Fourth avenue, for which \$25,000 is requested.

Newark, N. J.—The Park Commission will immediately proceed to the paving and improvement of Park avenue from its beginning in this city to Llewellyn Park, Orange, if bill now in Legislature passes.

Newton, N. J.—Sussex County Board of Freeholders is considering the building of a macadam road from Layton to Tuttle's Corners.

Perth Amboy, N. J.—City will pave the unpaved blocks between Smith and Gordon streets; cost, \$30,000.

Trenton, N. J.—The Legislature has passed the proposed Ocean Boulevard bill.

Albany, N. Y.—Council is considering the paving and sewerage of Morris street and the grading of Mercer street.

Brooklyn, N. Y.—Bids will be received March 31, 11 a. m., for regulating, grading, curbing and laying sidewalks on various streets; regulating, paving and repairing with asphalt on a concrete foundation and grading lots. —B. S. Coler, Borough President.

Great Neck, L. I., N. Y.—A proposition will come up at the town election on April 6 to macadamize Schenck's lane, now known as Manhasset avenue; an appropriation of \$7,500 for this work is asked for.

Jamestown, N. Y.—Council has decided to pave parts of six streets.

New York, N. Y.—Bids will be received March 31, 2 p. m., for furnishing materials, repairing and restoring artificial stone sidewalks and curbing and resetting natural stone curbing, for the completion of the contract abandoned by Thomas M. Hart.—J. H. O'Brien, Commissioner of Water Supply, Gas and Electricity.

Niagara Falls, N. Y.—Council is considering the paving of Eleventh street.

Niagara Falls, N. Y.—Citizens have petitioned for the paving of Ferry avenue; City Engineer Robbins is preparing plans.

Rensselaer, N. Y.—Council has decided to pave Harrison avenue, Glen, Pine and Second streets, Broadway, Washington and Central avenues.

Rockville, L. I., N. Y.—Citizens have voted \$1,000 for crosswalks; \$1,200 to improve Hendrickson avenue; \$1,000 to improve Park avenue; also passed the propositions to improve Clinton and North Park avenues and Maple avenue.

Syracuse, N. Y.—Commissioner of Public Works F. M. Westcott has estimated the cost of paving McBride street at \$30,000; three separate contracts will be let for the work; paving James street and Union avenue as follows; \$19,565 if creosoted block or sandstone is used, or \$18,400 if a concrete curb is designated; \$14,110 for asphalt, vitrified brick or block, bitulithic or bituminous macadam with a stone curb, or \$13,270 if curb is of cement; \$9,160 for a macadam pavement with a stone curb, or \$8,620 if with a cement curb; paving Union avenue to Laurel street, \$18,200 if sandstone or creosoted block with a stone curb is designated, and \$16,900 with a cement curb; \$13,100 for an asphalt, vitrified brick or block, bitulithic or bituminous macadam with a stone curb, or \$12,200 with a cement curb; \$8,500 for macadam pavement with stone curb, or \$7,850 with cement curb; last strip from Laurel street to Butternut street requires a supplementary estimate to permit the use of a mixed pavement if so designated by the property owners; for sandstone or creosoted wood block with a stone curb the estimate is \$8,170, or \$7,710 with cement curb; the estimate for asphalt, vitrified brick or block, bitulithic or bituminous macadam with a stone curb is \$5,925, or \$5,550 with a cement curb, and the estimate for macadam with a stone curb is \$3,910, or \$3,660 for a concrete curb; in the supplemental account it is provided that \$7,130 shall be the estimate if asphalt, bitulithic or bituminous macadam is used in the center, with sandstone on the grades of 4 per cent or over where a stone curb is designated, or \$6,570 where a cement curb is wanted.

Utica, N. Y.—Council is considering the paving of about thirteen streets.

Hickory, N. C.—Citizens will vote on bond issue for street improvements.

Akron, O.—A petition is being circulated among property owners to pave Lake street, in South Akron, from Main street, west to Lakeside avenue.

Akron, O.—The Street Committee of Council will recommend the proposition to pave Bowery street, from Wooster avenue to Thornton street, and also the improvement of the strip on Thornton street, from Bowery street to the canal bridge.

Akron, O.—Summit County will receive \$5,000 of the state road improvement fund; residents of the village of Twinsburg have asked for the improvement of the road leading to Bedford; residents along the Akron-Medina road and the road leading from East Market street to Magadore also desire improvements; County Commissioners will expend \$55,000 for good roads.—J. C. Wonders, State Highway Commissioner.

Akron, O.—City will expend \$335,000 for street improvements, sewers, etc.—John Payne, City Engineer.

Cambridge, O.—The Board of Public Service has decided to reject all bids previously received for furnishing 28,296 square yards of paving block; new bids will be received.

Columbus, O.—Ordinances covering the improvement of 44 streets and alleys about the city have been passed by Council; a large number of minor improvements in grading, repairing and other public work were also decided upon.

Columbus, O.—The National road west will soon be under repair, as the County Commissioners have agreed to issue an advertisement for bids; road will be 18 feet in width; two kinds of bids are asked, one for eight inches of crushed stone and the other for the same amount of stone with asphalt top.

Dayton, O.—Council has decided to improve Clinton and East Second streets.

Defiance, O.—Council has decided to pave

parts of Clinton, Jefferson and Second streets with brick block.

Sciotoville, O.—Bids will be received April 10, noon, for the purchase of \$5,000 of 4½ per cent highway improvement bonds.

—C. A. Walden, Clerk Board of Trustees, Porter Township.

Toledo, O.—Council has decided to improve Summit avenue.

Cape Girardeau, Okla.—Edw. Hely will build rock-crushing plant with daily capacity of 1,000 yards.

Lehigh, Okla.—Citizens have voted \$10,000 bonds for street improvements; O'Neil Engineering Company, Dallas, Tex., will have charge.

Oklahoma City, Okla.—Council is in favor of the paving of Lottie avenue, Park place and Orr street and the improvement of portions of Fifth avenue; ordinance has been passed for grading Twenty-ninth street from Military to Georgia avenue.—George Hess, City Clerk.

Portland, Ore.—The Alberta Improvement Association is considering the widening of Alberta street.

Aston Mills, Pa.—Aston Township Commissioners have agreed to borrow \$3,000 for the improvement of the highways, and the road tax has been increased a half mill.

Butler, Pa.—Council has ordered the grading and paving of Second street.—J. C. Clark, President.

Butler, Pa.—Council has adopted an ordinance for the paving of Lincoln avenue.

Butler, Pa.—Council is considering the paving of portions of Howard, Chestnut, Sullivan and West streets; the School Board is urging the paving of Lincoln avenue.

Camp Hill, Pa.—Borough Council is considering ordinances for the construction of telford macadam road on Cumberland street and new roads on Market street and Oyster Point avenue.

Clayton, Pa.—A two-mile State road is contemplated from the Hereford turnpike, near Clayton, to the Goshenhoppen turnpike, near Palm, Berks County.

Easton, Pa.—Council has passed an ordinance authorizing a \$50,000 bond issue for street improvement, subject to the approval of the voters at a special election April 26.

Harrisburg, Pa.—Mayor Meals has signed an ordinance authorizing the paving and curbing of Sixteenth street.

Harrisburg, Pa.—The State Highway Department will construct over three miles of brick paved road in Pine Creek Township, Jefferson County.—J. W. Hunter, Commissioner.

Pittsburg, Pa.—County Comptroller Robert J. Cunningham has awarded to Mason, Lewis & Co., of Chicago, the contract for \$1,000,000 worth of 4 per cent county road bonds, the bid being \$102,1711 on each \$100 worth.

Pleasant Hill, Pa.—The County Commissioners and the Auxiliary Road Commission for Cecil County has decided to gravel the road from that village to Kirk's Bridge.

Scranton, Pa.—City is considering the paving and grading of Jackson street.

Stroudsburg, Pa.—Citizens of Monroe County are urging the construction of good roads.

Williamsport, Pa.—City will resurface 10,000 square yards on West Fourth street.—Jas. F. Fisher, City Engineer.

York, Pa.—Council is considering paving of East Market from Pearl to Broad street; cost not to exceed \$2 a square yard for sheet asphalt.

Providence, R. I.—The Board of Aldermen has issued orders for the curbing of Home, Oakland and Lenox avenues and Saratoga, Huron, Fern, Hanover and Temple streets.

Lead, S. D.—Council is considering the macadamizing of side streets in the business section.

Chattanooga, Tenn.—City has sold \$7,805 paving bonds to the First National Bank of Cleveland.

Jonesboro, Tenn.—Washington County citizens have defeated \$150,000 bond issue for road improvements.

Knoxville, Tenn.—Knox County Road Commission has appropriated \$45,750 for the repairing of pikes during 1909.

Nashville, Tenn.—Bids will be received by the Bond Commissioners April 16, 3 p. m., for the sale of \$125,000 suburban street bonds.—H. S. Bauman, City Recorder.

Nashville, Tenn.—Citizens on Gartland avenue have petitioned for the grading and paving of this thoroughfare.

Nashville, Tenn.—John Drewry Foy, Nashville, Tenn., will purchase 3,500 square yards paving brick, ordinary size, with square edges, and not regular paving blocks; delivery at Frankfort, Ky.

Newport, Tenn.—Cocke County Court has authorized a \$20,000 bond issue for road improvements.

Park City, Tenn.—The Street Committee will receive bids for the grading of Chestnut and Harrison streets.

Rockwood, Tenn.—City is considering \$20,000 bond issue for public improvements, including street work.

Dallas, Tex.—The Park Board has authorized Superintendent Tietze to let a contract for some additional sidewalk building in Central square.

El Paso, Tex.—The County Judge has been authorized to sell \$250,000 road improvement bonds; Commissioners will extend road from Ysleta to Fabens.

Paris, Tex.—City will let contracts in about 50 days for one mile of bitulithic paving.

Norfolk, Va.—Norfolk County Commission has decided upon the following road work to be accomplished under the \$200,000 bond issue with an expenditure of something like \$6,000 a mile: A nine-mile road from Berkley ward to Great Bridge; a seven-mile road from Norfolk to Ocean View; a seven-mile road from Portsmouth to Deep Creek, and a four-mile road from Portsmouth to the Western Branch section.

Norfolk, Va.—The Permanent Road Commission has decided to construct macadam road from city limits through Port Norfolk to water edge at Pinner's Point; estimated cost, \$25,000.—A. H. Martin, M. G. Long and G. W. Brown, Commission.

Comas, Wash.—Bids have been advertised for the grading of Fourth street.

Seattle, Wash.—City Engineer R. H. Thomson has estimated the cost of the following improvements: Vine street, asphalt paving, \$67,500; Occidental avenue, plank, \$4,400; Roy street, asphalt paving, \$5,500; Thirtieth avenue South, grading and curbing, \$15,500; Ravenna Boulevard, same, \$11,600; Calhoun street, same, \$58,600; Valley street, concrete walks, \$12,300, and Thirty-second avenue N. E., grading and curbing, \$20,000.

Seattle, Wash.—If there are sufficient funds available to do so, the Board of County Commissioners will authorize the building of a piled driveway approximately 6,500 feet long across the north end of Union Bay.

Seattle, Wash.—Council has passed bills for the improvement of numerous streets.

Walla Walla, Wash.—Council has passed ordinances creating thirteen improvement districts.

Wheeling, W. Va.—The Ohio Valley Automobile Club has petitioned for the widening of McCulloch street.

Menasha, Wis.—Bids will be received for construction of one mile of concrete paving.—S. S. Little, City Clerk.

Sheboygan, Wis.—Council has passed an ordinance providing for the paving of Huron avenue.—C. U. Boley, City Engineer.

BIDS RECEIVED AND CONTRACTS AWARDED

Mobile, Ala.—Bids were opened for the tenth, eleventh, twelfth, thirteenth, fourteenth and fifteenth sidewalk paving ventures, March 25, the bidders being J. S. Conniff, Montgomery; Chamblin Cement Company, Brandon & Son, Koolman & Company, Bigler Brothers, of Mobile, and contracts were awarded to Bigler Brothers at eleventh venture, and to the Chamblin Cement Company, who bid 71 cents a square yard on the tenth venture, 73½ cents on the twelfth, 71 cents on the thirteenth, 69½ cents on the fourteenth, and 71¼ on the fifteenth.

Little Rock, Ark.—I. P. Shelby, of Little Rock, has contract at \$31,000 to pave High street with brick; cement filler.

Riverside, Cal.—Council has opened bids as follows for the paving of Seventh street: Star Cement Company, \$13,716; Johnson-Shea Company, \$13,343; Two Miracle Concrete Corporation, \$12,098; Winters & Shull, \$12,980, and Rife & Cafe, of Redlands, \$11,535.

New London, Conn.—The contract for 7,000 square yards of vitrified brick pavement on State street, bids opened on March 15, has been awarded to James W. Booth, city, at \$2.69 per square yard, with a 5-year guarantee, and \$2.65 without guarantee; other bidders were: C. W. Blakeslee & Sons, New Haven, \$2.85 and \$2.75; John J. Ryan, New London, \$2.88 and \$2.80; Pierson Engineering & Construction Company, Bristol, \$2.73 and \$2.70; Connecticut Has-sam Pavement Company, \$2.89 and \$2.80; G. H. Gill, \$2.92 and \$2.89; Fred T. Ley Company, Springfield, Mass., \$2.88 and \$2.83.

Jacksonville, Fla.—The Board of County Commissioners, March 26, awarded a contract for the furnishing of 80,000 vitrified clay paving blocks to be used in constructing a quarter of a mile of paving of the Lem Turner road to the Southern Clay Manufacturing Company, of Chattanooga, Tenn.; the company offered to furnish the 80,000 brick at \$19.60 per thousand, f.o.b. cars in Jacksonville, and states that the paving block will last forty years or more with ordinary use.

Rock Island, Ill.—Following are the de-

tails of the successful bid of the Tri-City Construction Company, of Davenport, Ia., for paving with brick a portion of Ninth street, as stated March 24: 18,994 yards of paving at \$1.62 per square yard, 10,392 feet of curbing at 50 cents per linear foot, 6,120 yards of grading at 40 cents per cubic yard, 70 feet reinforced concrete sewer at \$14 per foot, 1,345 feet of 15-inch sewer at \$1.25 per foot, 19 catchbasins at \$40 each.

Indianapolis, Ind.—Following are the low bids received by the Board of Public Works: Twentieth street, curb, from Cornell avenue to Monon railroad: William H. Hall, 70 cents; Brookside avenue, curb, from Rural street to west end of Twentieth street; Lackey Bros., 71 cents; Oxford street, from North street to 1,200 feet south of Tenth street, cement walk and curb; J. W. Hunt, \$1.21; Chester avenue, from Washington street to Moore avenue, cement walks, curb and graded roadway; J. W. Hunt, \$1.40; Twenty-ninth street, from Bellefontaine street to street car tracks on east bank of Fall Creek, cement walks and curbing; Lackey Bros., \$1.31; Ethel street, from Thirtieth to Udel street; cement walks and curb; George W. Shelby & Company, \$1.47; Alabama street, from Pratt street to Eleventh street, cement walks; Marion Caldwell, 54 cents.—Blaine H. Miller, City Engineer.

Grinnell, Ia.—John Spencer has been awarded contract by the city at 10 cents per square foot for cement walks and 11 cents per square foot for brick.

Louisville, Ky.—The Board of Public Works, March 24, awarded contracts for \$136,946.53 of asphalt construction, the largest contract ever awarded for paving at one time by the city; about 40 blocks of streets are to be built and the work is to be done at once; the average price for the construction is about \$1.80 a square yard. The following contractors were the successful bidders, and the amount of their awards: Marlon County Construction Company, of Indianapolis, reconstruction, \$63,972.31; new work, \$8,987.40. The M. H. McGovern Company, of Chicago, resurfacing Third avenue and Eighth street, \$18,836.30; new work, \$38,654.90. American Standard Asphalt Company, of Louisville, \$4,771.24. About \$11,000 of the work advertised was not awarded, and new bids will be asked; Chairman Barrett said this was the lowest bidding for asphalt on record.

The Board of Public Works opened proposals, March 27, for the construction of four alleys; the bidders were Stabler & McFarland, Lee Figg, George W. Gosnell and Henry Bickel. Prices ranged from \$1.52 to \$1.75 a square yard.

Elkton, Md.—Contract for macadamizing about three miles of Rising Sun-Principio road and ½ mile of Korner Ketch road has been awarded to Horrihan Construction Company, of Wilmington, Del., for \$25,272.—John H. Terrell, County Clerk.

Boston, Mass.—Mayor Hibbard has approved a contract by which the Rowe Contracting Company is to operate the stone crusher on the Chestnut Hill ledge in Brighton, which is owned by the city; the city is to pay 95 cents a ton for stone crushed by the company there, and will receive 15 cents a ton for stone crushed there and sold to other parties.

Pasadena, Cal.—The bid of Mushrush & Sprague (a) has been accepted for street work on Carey avenue, at \$4,166.75; (b) Smith & DeGryse bid \$4,180.80; (c) J. C. Kinsman, \$4,271.30, and (d) A. W. McDowell, \$4,561.77. Grading will be 30 feet wide and street oiled with crude mineral oil; cement curb will be 5 inches wide at top 12 at bottom, and 16 inches deep on one side of street and 5x11x15 inches on other side, with a batter of 3½ inches on one side and 3 inches on the other; cement gutter to be 3 feet in width and cement sidewalks 5 feet wide. On the bids received for street work on Locust street: Street will be graded 30 feet wide and oiled with crude mineral oil, cement curb 5 inches wide on top, 11 at bottom, depth of 14 inches, with a batter of 3 inches on each side; cement gutter to be 3 feet wide and cement sidewalks 5 feet wide, by Herman Dyer, City Clerk; (e) J. C. Kinsman, accepted, \$1,583.76; (f) A. W. McDowell, \$1,674.41; (g) J. E. Haddock, \$1,684.17; (h) Chamberlain & Williamson, \$1,720.56 (i) H. T. Kemp, \$2,005.25. Prices below given in cents.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Paving, per square foot.....	9½	9½	9	9½	9	9½	9½	10	9½
Sidewalk, per square foot.....	30	25	41	49	10	15	18	14	30
Grading, per linear foot.....	22, 25	25	24	25	23	23	22	26	17
Curb, per linear foot.....	13	13½	13	13½	13	13½	14	14	13½
Gutter, per square foot.....	30	30	30	30	30	30	29	26	30
Oiling, per linear foot.....									

Helena, Mont.—Following are the bids for work of proposed improvement in District No. 33; no contract awarded as yet. Totals—(a) McMillan & Fowler, \$106,859.25; (b) R. E. Lee, \$106,629.85; (c) Adams Brothers, \$99,722.80; (d) Miracle-Tripp Company, \$93,510.70; (e) John Harkness, \$94,447.60.—Charles W. Helmick, City Engineer.

	(a)	(b)	(c)	(d)	(e)
58,610 cubic yards excavation.....	\$0.55	\$0.60	\$0.55	\$0.50	\$0.42
28,825 feet concrete curb.....	.60	.50	.45	.50	.44
136,180 square feet concrete walks.....	.20	.19	.18	.18	.18
4,656 cubic yards loam.....	1.75	1.80	1.50	1.45	3.00
1,105 trees.....	1.10	1.65	1.00	.90	1.00
1,105 holes dug.....	1.25	.65	.65	.50	1.00
1,560 pounds of seed sown.....	.30	.20	.25	.20	.15
75 catchbasins.....	25.00	22.00	30.00	22.00	18.00
4,400 feet of 12-inch pipe laid.....	.73	.80	.80	.75	.85
2,600 feet of 10-inch pipe laid.....	.66	.70	.70	.60	.85
700 feet of 18-inch pipe laid.....	1.25	1.40	1.25	1.25	1.25
4,500 feet of 1½-inch pipe laid.....	.43	.35	.60	.40	.35
3,780 feet of cross walks, concrete.....	1.44	1.80	1.50	1.00	1.00
4,680 feet of cobblestone gutter.....	.30	.35	.24	.22	.20
102 double hose connections.....	21.90	19.00	25.00	25.00	16.00
21 street boxes.....	6.00	.85	14.20	6.00	6.00

Battle Creek, Mich.—The following bids were received for 14,500 square yards of paving brick: Detroit Vitrified Brick Company, 77 cents per yard; Metropolitan Paving Brick Company, 88 cents per yard; Metropolitan Paving Brick Company, 80 cents per yard; Peebles Paving Block Company, 82 cents per yard; C. W. Filler & Co., No. 1 Buckeye Block, 73.8 cents per yard; the Wassall Brick Company, 78 cents per yard; Saginaw Paving Brick Company, 77.7 cents per yard; Athens Brick Company, 80 cents per yard; Nelsonville Block, 80 cents per yard; South Jonesville Sewer Pipe and Brick Company, 76.9 cents per yard; South Jonesville Sewer Pipe and Brick Company, 78.7 cents per yard; the Logan Brick Supply Company, 76 cents per yard; Bessemer Lime Stone Company, 82 cents per yard; Rathbun & Kraft Lumber and Coal Company, 81 cents per yard.

Manistee, Mich.—No contract was let March 16 for paving Main and Thirteenth streets with brick or bitulithic, about 5,940 square yards, 2,835 linear feet combined curb and gutter; on account of injunction proceedings new bids will be called for later.—J. Roch Mangan, City Clerk.

St. Paul, Minn.—The Portland Stone Company, New York Life Bldg., submitted low bid at \$70,595 for constructing cement sidewalks during the present year.

Paterson, N. J.—The bids of N. B. Smalley & Company, for furnishing crushed stone and that of the Watching Stone Company for furnishing culverts and crosswalks, have been accepted in accordance with resolutions offered by Councilman W. L. Gloak, Chairman of the Street Committee. These bids were the lowest.

Buffalo, N. Y.—Bids were opened at the office of the Grade Crossing Commission, March 18, for work at the Parkside, Colvin and Delaware avenue crossings of the Belt Line. Nine bids were put in for the work, which includes masonry, excavation and paving. The bids were as follows, figures for stone and masonry being given first and for reinforced concrete after: Thos. Brown Construction Co., \$133,570.88, \$126,594.83; John Miller, \$137,464.98, \$124,032.18; Mosier & Summers, \$133,673.15, \$154,123.15; McArthur Bros. & Company, \$156,308.08, \$138,135.58; John Johnson, \$126,472.98, \$120,863.93; Eastern Concrete Steel Company, \$116,312.02, \$106,993.77; John F. Stabell Company, \$111,609.80, \$102,827.40; H. P. Burgard Company, \$117,611.46, \$109,806.96; George R. Cooke, \$127,378.12, \$113,729.22.

The Commissioner of Public Works has been directed to enter into a contract with the German Rock Asphalt and Cement Company for the repaving and widening of Broadway; cost, \$140,000.

Geneva, N. Y.—The Board of Public Works, Mar. 22, went over the tabulated bids for the paving of Elm, Canal, Washington and Canal streets, and it was found that Whitmore, Rauber & Vicinus, of Rochester, were the low bidders, and they were awarded contract. It was a matter of close bidding between the Rochester firm and R. W. Henson, of Geneva. The bid of Whitmore, Rauber & Vicinus for the three prominent bricks was: Metropolitan, \$44,206.75; Corning, \$41,014.35; Mack, \$45,594.75; Henson, Metropolitan, \$44,657.75; Corning, \$41,465.35; Mack, \$46,184.55; at a

public hearing the property owners of the respective streets will decide the kind of brick they prefer.

The bids received were as follows:

Whitmore, Rauber & Vicinus, of Rochester: Excavation, 40 cents per cubic yard; Metropolitan block, \$2.12 per square yard; Corning block, \$1.89 per square yard; Mack block, \$2.22; curb stone, 79 cents per foot; protection curb, 55 cents per foot; 3-inch drain tile, 50 cents per foot; 10-inch vitrified pipe, 50 cents per foot; 12-inch vitrified pipe, 65 cents per foot; 15-inch vitrified pipe, 80 cents per foot; 18-inch vitrified pipe, \$1.10 per foot; catch basins, \$35; inlets, no bid.

R. W. Henson, of Geneva: Excavation, 40 cents; Metropolitan block, \$2.10; Corning block, \$1.87; Mack block, \$2.21; Kashequa block, \$1.93; Clearfield block, \$1.95; Pennsylvania clay, \$1.96; curb stone, 80 cents; protection curb, 50 cents; 3-inch drain tile, 10 cents; 8-inch vitrified pipe, 52 cents; 10-inch vitrified pipe, 63 cents; 12-inch vitrified pipe, 75 cents; 15-inch vitrified pipe, 88 cents; 18-inch vitrified pipe, \$1.00; catch basins, \$40; inlets, \$30.

James B. Hurley, of Fredonia: Excavation, 40 cents; Metropolitan block, \$2.12; Corning block, \$1.89; Kashequa block, \$1.95; curb stone, 80 cents; protection curb, 50 cents; 3-inch drain tile, 12 cents; 8-inch vitrified pipe, 48 cents; 10-inch vitrified pipe, 53 cents; 12-inch vitrified pipe, 63 cents; 15-inch vitrified pipe, 88 cents; 18-inch vitrified pipe, \$1.18; catch basins, \$38; inlets, no bid.

Guy B. Dickenson, of Syracuse: Excavation, 45 cents; Metropolitan block, \$2.39; Corning block, \$2.17; Mack block, \$2.51; curb stone, 80 cents; protection curb, 40 cents; 3-inch drain tile, 5 cents; 8-inch vitrified pipe, 40 cents; 10-inch vitrified pipe, 50 cents; 12-inch vitrified pipe, 75 cents; 15-inch vitrified pipe, \$1.00; 18-inch vitrified pipe, \$1.15; catch basins, \$20; inlets, \$20.

Mulderry Brothers, of Albany: Excavation, 43 cents; Metropolitan block, \$2.19; Corning block, \$1.93; Mack block, \$2.25; Vossburg block, \$2.24; Porter block, \$2.15; Standard block, \$2.15; curb stone, 80 cents; protection curb, 65 cents; 3-inch drain tile, 12 cents; 8-inch vitrified pipe, 70 cents; 10-inch vitrified pipe, 80 cents; 12-inch vitrified pipe, 90 cents; 15-inch vitrified pipe, \$1.15; 18-inch vitrified pipe, \$1.50; catch basins, \$48; inlets, \$27.

P. D. Conley & Co., of Ithaca: Excavation, 35 cents; Metropolitan block, \$2.24; Corning block, \$2.01; Mack block, \$2.36; Kashequa, \$2.07; curb stone, 80 cents; protection curb, 50 cents; 3-inch drain tile, 10 cents; 8-inch vitrified pipe, 40 cents; 10-inch vitrified pipe, 50 cents; 12-inch vitrified pipe, 60 cents; 15-inch vitrified pipe, 80 cents; 18-inch vitrified pipe, \$1; catch basins, \$35; inlets, no bid.

J. R. Baxter, Jr., of Utica: Excavation, 50 cents; Metropolitan block, \$2.24; Corning block, \$1.98; curb stone, 85 cents; protection curb, 70 cents; 3-inch drain tile, 10 cents; 8-inch vitrified pipe, 50 cents; 10-inch vitrified pipe, 55 cents; 12-inch vitrified pipe, 65 cents; 15-inch vitrified pipe, 90 cents; 18-inch vitrified pipe, \$1.20; catch basins, \$35; inlets, \$30.

D. D. Dugan of Olean: Excavation, 49 cents; Metropolitan block, \$2.25; Corning block, \$2.16; Kashequa block, \$2.20; curbstone, 95 cents; protection curb, 63 cents; 3-inch drain tile, 9 cents; 8-inch vitrified pipe, 50 cents; 10-inch vitrified pipe, 77 cents; 12-inch vitrified pipe, 89 cents; 15-inch vitrified pipe, 94 cents; 18-inch vitrified pipe, \$1.00; catch basins, \$40; inlets, \$50.

H. C. Schroeder, of Rochester: Excavation, 50 cents; Metropolitan block, \$2.24; Corning block, \$1.95; Vossburg block, \$2.05; Pennsylvania clay, \$2.05; macadam pavement, \$1.60 per square yard; Medina curbstone, 75 cents; Cleveland sandstone curbstone, 62 cents; protection curb, 70 cents; 3-inch drain tile, 10 cents; 8-inch vitrified pipe, 70 cents; 10-inch vitrified pipe, 85 cents; 12-inch vitrified pipe, \$1.00; 15-inch vitrified pipe, \$1.35; 18-inch vitrified pipe, \$2.00; catch basins, \$20; inlets, \$20.

Thomas Hucknall, of Albion: Excavation, 50 cents; Metropolitan block, \$2.37; Corning block, \$2.06; Mack block, \$2.48; curbstone, 70 cents; protection curb, 65 cents; 3-inch drain tile, 4 cents; 8-inch vitrified pipe, 70 cents; 10-inch vitrified pipe, 75 cents; 12-inch vitrified pipe, 90 cents; 15-inch vitrified pipe, \$1.00; 18-inch vitrified pipe, \$1.25; catch basins, \$32; inlets, no bid.

J. C. O'Neill, of Geneva: Excavation, 48 cents; Metropolitan block, \$2.15; Corning block, \$1.90; Mack block, \$2.25; Vossburg block, \$2.21; Kashequa block, \$1.96; Hornellsville block, \$1.90; curbstone, 90 cents; protection curb, 55 cents; 3-inch drain tile, 5 cents; 8-inch vitrified pipe, 50 cents; 10-inch vitrified pipe, 55 cents; 12-inch vitrified pipe, 70 cents; 15-inch vitrified pipe, 90 cents; 18-inch vitrified pipe, \$1.20; catch basins, \$35; inlets, \$25.

Read-Coddington Engineering Co., of Niagara Falls: Excavation, 80 cents; Met-

ropolitan block, \$2.45; Corning block, \$2.22; Mack block, \$2.51; Kashequa block, \$2.28; concrete pavement, \$1.70 per square yard; curbstone, 70 cents; protection curb, 60 cents; 3-inch drain tile, 8 cents; 8-inch vitrified pipe, 25 cents; 10-inch vitrified pipe, 40 cents; 12-inch vitrified pipe, 50 cents; 15-inch vitrified pipe, 65 cents; 18-inch vitrified pipe, 80 cents; catch basins, \$30; inlets, \$20.

Kingston, N. Y.—Following are the bids for the Broadway pavement: The first figure indicates bid for paving all except between the rails; second amount, all that portion except between the rails and two feet outside; third amount, total between curbs.

John H. Gleason, Troy—Fire clay, \$128,000, \$114,150, \$144,500; Shawmut clay, \$119,010, \$106,000, \$134,500; Shawmut shale, \$117,500, \$104,800, \$132,600.

Ring & Foley, Paterson, N. J.—Climber block, \$124,282.60, \$110,947.20, \$139,118.20; Pittsburg-Buffalo block, \$126,652.65, \$113,059.80, \$141,793.55; Catskill block, \$114,802, \$102,488.80, \$123,416.80.

Connecticut Hassam Paving Company—Shawmut clay, \$126,641.71, \$114,201.02, \$141,459.72; Clearfield, \$120,529.34, \$108,760.13, \$134,560.76; Mack block, \$126,641.71, \$114,211.02, \$141,469.72.

Beckwith-Mahnehm, Herkimer, N. Y.—Bessemer block, \$154,000, \$138,000, \$173,000; Mack block, \$147,000, \$131,000, \$166,000; Clearfield, \$141,000, \$127,000, \$169,000; Metropolitan block, \$153,000, \$137,000, \$172,000. Morris Kantowitz, Albany—Clearfield, \$117,000, \$105,000, \$131,000; Mack block, \$121,000, \$109,000, \$136,600.

Standard Construction Company, Sandy Hill, N. Y.—Shawmut clay, \$149,000, \$134,000, \$169,000; Clearfield, \$145,000, \$130,000, \$165,000; Mack, \$149,000, \$134,000, \$169,000.

Eldridge & Grannis, Ossining—Clearfield, \$126,625, \$113,598, \$142,468; Mack, \$132,495, \$118,832, \$149,092; Metropolitan, \$135,950, \$121,896, \$152,971; Messemmer, \$135,452, \$121,452, \$152,410.

Mulderry Bros., Albany—Mack, \$122,000, \$109,300, \$137,000; Bessemer, \$125,000, \$112,200, \$140,000; Pennsylvania clay, \$117,000, \$105,000, \$131,200; Johnston Briggs block, \$124,200, \$111,400, \$139,000; Clearfield, \$116,200, \$104,200, \$130,500; Catskill, \$115,100, \$103,308, \$129,995.

John R. Baxter, Jr., Utica—Pennsylvania clay, \$137,936, \$123,011, \$155,705; Clearfield, \$137,936, \$123,011, \$155,705; Messemmer, \$149,313, \$133,156, \$168,547; Mack, \$144,573, \$128,929, \$163,196; Metropolitan, \$148,365, \$132,311, \$167,476.

Bonacci Vincelli Construction Company, Brooklyn (sample brick on exhibition in City Hall): \$129,919.37, \$108,727.30, \$137,803.53.

Charleston & Weston, Yonkers (sample brick on exhibition in City Hall): \$141,254.83, \$129,970.56, \$159,450.86.

Doland & Holler, Albany—Metropolitan, \$136,300.77, \$122,093.44, \$152,114.25; Bessemer, \$135,826.76, \$121,670.72, \$151,609.18; Mack, \$131,982.70, \$118,133.40, \$147,396.76; Shawmut, \$128,716.61, \$115,329.92, \$143,583.13; Clearfield, \$126,294.58, \$113,061.76, \$143,977.92; Pennsylvania clay, \$126,346.52, \$113,216.32, \$140,907.78.

The bids were referred to the Street Committee, City Engineer and Corporation Counsel.

New York, N. Y.—The following bids were opened, Mar. 11, by the Park Board for furnishing and delivering gravel on parks and parkways, in Manhattan Borough: Jacob E. Conklin, 299 Broadway, \$19,500; John Fleming, 169 Broad street, \$20,150; John A. McCarthy, Rivington street and East River, \$18,800; John B. Rose Co., foot of West 52d street, \$21,900; Roger L. Young, 17 Battery place, \$19,700.—Henry Smith, President.

Syracuse, N. Y.—Philip Thomas was the successful bidder for the grading of Logan avenue, being awarded a contract for this work at \$2,236.50; he had five competitors, as follows: Alexander Barr, \$2,288.50; Albert Gaffey, \$2,570; Lowery Brothers, \$2,551; P. R. Kieley, \$2,713.50, and C. T. Hookway, \$2,453.10.

Mr. Thomas was also awarded another grading job involving the grading of Dillaye avenue, from Burnet avenue to Pine street, at \$352.50; other bids were: Albert Gaffey, \$442.50; C. T. Hookway, \$462; H. C. Lewis, \$510, and Sullivan & Davin, \$420.

A sidewalk construction contract went to John Barr at 9 3/4 cents a square foot, a trifle higher than the prevailing rate last fall, when from 8 1/2 to 9 cents ruled; the total of his bid was \$193.75; other bids submitted were as follows: Albert Gaffey, \$211; Artificial Paving Company, \$238.90; Salt City Paving Company, \$202.25; Philip Thomas, \$215, and J. M. Hill, \$250.90.

Troy, N. Y.—The Board of Contract and Supply has received proposals for the paving of Douw street, among the bidders being the Hassam Paving Company, but the opinion prevails that the Board has no legal right to consider the proposition made by that corporation, inasmuch as the specifications did not call for the kind of pave-

ment bid upon by it. The bidders for the paving were E. H. McKenna, Robert K. Gleason, John Flynn, Jr., the Hassam Paving Company and George Hannan. In connection with the Hassam bid the company submitted a petition signed by two property owners on the thoroughfare, representing three hundred feet of the four hundred feet frontage on the street, and Corporation Counsel Wellington stated that the question might arise as to what authority the Board has to consider the bid of the Hassam company when the character of pavement they offer to lay is not mentioned in the specifications. If consideration was given the bid by the Board the legal adviser is of the opinion that there might possibly be a court order which would interfere with the progress of the work. The matter was referred to the City Engineer for investigation.

Ashland, O.—Council has awarded contracts for paving with Bolens block on Bank and Grant streets to D. A. Phillips, of Ashland, at \$21.845 and \$5.382.

Cleveland, O.—G. B. Herring & Son, of Mansfield, have secured a contract for paving two streets for \$10,779.

Jefferson, O.—Jenkins & Hines, Frankfort, Ind., were low bidders for the construction of a tar macadam road in New Lime and Rome Townships, Ashtabula County. The items of their bid were: 7,830 cubic yards excavation, 30c.; 41 cubic yards concrete masonry, \$6; 264 linear feet concrete culvert pipe, \$4; 8,767.5 cubic yards macadam, \$2.70; 16,506 M paving blocks, \$26. The price bid for macadam includes the tar treatment. The bids for this item were: \$2.70, \$2.74, \$3, \$3.02, \$2.98, \$3.15, \$3.20, \$3.20, \$3.95. The totals of all bids were: Jenkins & Hines, \$27,752.40; Nimms-Clements & Co., East Oswell, O., \$28,216.42; Buckeye Engineering Co., Norwalk, O., \$29,593.10; Wilson & Wiswell, Windsor, O., \$29,734.53; R. P. Burrett, Cleveland, O., \$29,833.66; Batchelor & Wingate, Conneaut, O., \$31,010.61; Waldeck, Reddy & Young, Warren, O., \$32,263.13; Northwestern Construction Co., Franklin, Pa., \$32,994.77; Uber & Breckenridge, Grove City, Pa., \$40,661.27.—J. S. Matson, County Engineer.

Butler, Pa.—The bids for the paving of East Fulton street, from McKean to Franklin, shows that the prices asked by the different contractors are considerably lower than at any time in the history of the town; there were a number of new firms after the work, but their bids were too high to be taken into consideration, and the contract was awarded to John Schaffner. Mr. Boyer's proposal for the paving with the Du Bois and Butler block was \$1.19 per square yard for the brick; stone curb, 49 cents; cement curbing, 67 cents; excavating, 37 1/2 cents per cubic yard; pitch, 14 cents per cubic yard. The bid of Mr. Morelli was the same for the brick, with stone curb at 53 cents; cement, 63 cents; excavating, 39 cents; pitching, 15 cents. Mr. Schaffner's bid on the job, was seemingly higher according to the bid on the brick, which was \$1.26 per square yard, but the price on the curbing and the excavating is somewhat lower than the other two bidders, the prices for the curbing being cement, 60 cents; stone, 58 cents, being higher on the latter quality of curbing, while the price on the excavating is thirty cents per cubic yard.

Park City, Tenn.—Council received seven bids for the grading of Harrison, Chestnut and Spruce streets, and the bid of the road building firm of Little & McBee was the lowest, being \$2.150, and was accepted.

Paris, Tex.—McKnight & Freeland have been awarded contract for 7,000 square yards 5-inch concrete block at \$1.33, and W. S. Laughlin and S. N. Dotson have been awarded contract for about half a mile of concrete sidewalks, at an average cost of 14 1/2 cents per square foot.—O. B. McKnight, City Secretary.

Richmond, Va.—Contract has been awarded to the Washington Asphalt Block and Tile Company for six blocks of paving, about 2,400 linear feet, at \$2.17 per square yard.

Milwaukee, Wis.—Badger Construction Co., has been awarded contract for 12,483 square yards asphalt paving, 3 inches thick on 6-inch concrete foundation, for \$2.32 per square yard.—Charles J. Poetsch, City Engineer.

Winnipeg, Man., Can.—The J. I. Case Threshing Machine Company, city, has secured contract for a 10-ton macadam roller for \$2,553.—M. Peterson, Secretary Board of Control.

completed for main sewer for the southerly portion of Islar's Creek Valley; Supervisors have been requested to set aside \$60,000 to defray cost of work.

San Francisco, Cal.—City has completed plans for the construction of portion of sewers for sewage only for Yerba Buena District; for the construction of the North Beach Intercepting sewer and Section "A" of the North Point sewer; Supervisors have been requested to set aside \$7,500 to defray cost of construction of a 6-foot concrete sewer in Mariposa street.

Tulare, Cal.—Plans have been prepared by Civil Engineer Frank D. Hinsdale for a system of sewers and sewage disposal plant; cost, about \$50,000; bonds will be issued.

Rockville, Conn.—The Public Works Committee will install about 500 feet of sewer in East and Hale streets.

Waterbury, Conn.—The Board of Aldermen is considering construction of sewers in South Wilson and Chapman streets.

New Castle, Del.—The Legislature will pass a bill authorizing the city to expend \$100,000 for sewer and paving purposes during the year; as there are no sewers in the city work will begin very soon on work which will form part of an extended system; both terra-cotta pipes and conduit sewers, draining into the Delaware River through ponds and sluices, will be installed; a sewage disposal plant will eventually be required.—Wm. A. Kimmey, Wilmington, City Engineer.

Washington, D. C.—Plans for a new sewer have been drawn by Asa E. Phillips, Superintendent of Sewers, so that drainage lines will be constructed as far north of the city as the Industrial Home; right-of-way through private property has been acquired by the District; permission has been granted by the Secretary of the Navy, George Von L. Meyer to build 800 feet of the line through the westerly portion of the United States Naval Observatory grounds; sewer will be about half a mile in length.

De Funiak Springs, Fla.—Citizens will vote April 15 on \$8,000 sewer bond issue.

Perry, Fla.—Citizens have voted \$15,000 bonds for sewer construction.—John C. Calhoun, Clerk.

Joliet, Ill.—The Board of Local Improvements is considering the construction of a sewer on Akin avenue.

Sterling, Ill.—Estimates have been prepared by City Engineer Palmer for the proposed Second avenue sewer system; cost, \$30,850.

Evansville, Ind.—Citizens in the neighborhood of Eighth street have petitioned for the construction of a sewer in alley from Vine to Division and Eighth to Ninth streets.

Evansville, Ind.—Plans are being prepared by City Engineer Jas. D. Saunders for five vitrified pipe local sewers; cost, about \$15,000; separate bids will be received by the Board of Public Works in about four weeks.—Walter F. Wunderlich, Clerk, Board of Public Works.

Kendallville, Ind.—City will construct glazed pipe sewers on North State street; estimated cost, \$5,000.—W. E. Sawyer, of Albion, Engineer.

Peru, Ind.—The Board of Trustees has disposed of \$13,000 worth of sewer bonds to G. Conradt, of this city.

Vincennes, Ind.—The Legislature has passed a bill allowing the city to construct sewers and a pumping station; plans will be prepared by City Engineer J. V. Hershey; bids will be received by the Board of Public Works about June 1; cost, \$200,000.—Edward Watson, Chairman.

Burlington, Ia.—City will lay nearly a mile of sewer extensions.

Council Bluffs, Ia.—Plans are being prepared by City Engineer S. L. Etnyre for one mile of 8, 10 and 12-inch lateral pipe sewers.—A. W. Casady, City Clerk.

Clear Lake, Ia.—Burns & McDonnell, Engineers, Scarritt Bldg., Kansas City, Mo., are preparing plans for a sewerage system.

Sioux City, Ia.—Council has ordered bids advertised for the extension of the Fourteenth street sewer and 12-inch sewers on George, Ross and Rebecca streets; total cost, \$3,136.90.—G. Y. Skeels, City Engineer.

Ablene, Kan.—Plans are being prepared by Burns & McDonnell, Engineers, Scarritt Bldg., Kansas City, Mo., for a sewerage system.

Leavenworth, Kan.—The Board of Commissioners has decided to build a vitrified tile main trunk sewer in main sewer district No. 9.—J. H. Kirmeyer, City Clerk.

Manhattan, Kan.—Burns & McDonnell, Engineers, Scarritt Bldg., Kansas City, Mo., are preparing plans for sewers.

Marion, Kan.—The receiving of bids for septic sewage disposal tank in Sewer District No. 3 has been postponed on account of the creating of additional sewer districts and the probable adoption of a single septic sewage disposal tank for the accommodation of all sewer districts in the city; bids

SEWERAGE

Ensley, Ala.—Citizens have voted \$75,000 bonds for sanitary sewer system.

Sacramento, Cal.—City Engineer Randle has recommended the repairing of the sewers in Third, Fifth, Ninth, Seventeenth, Twenty-first and U streets; cost, \$26,000.

San Francisco, Cal.—Plans have been

will be called for later.—T. W. Brown, City Clerk.

Osawatomie, Kan.—Plans are being prepared by Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for a sewerage system.

Latonia, Ky.—Council has decided to construct sewers in Michigan and Vermont avenues.

Brockton, Mass.—City will construct from three to five miles of pipe sewers this year by day labor.—Charles R. Felton, City Engineer.

Cadillac, Mich.—The Board of Public Works has prepared estimates for sewers in East Pine, Lincoln, Blodgett and East Garfield streets.

Detroit, Mich.—The Sewer Committee has allowed \$353,892 for sewer work during the year.

Hartington, Neb.—City will install a complete sewer system.

Omaha, Neb.—City Engineer Andrew Rosewater has been instructed to proceed without delay on the construction of a drainage ditch across the Florence bottoms; \$4,000 has been appropriated for the work.

Beverly, N. J.—Council is considering the sewerage question; between \$40,000 and \$50,000 will be necessary for the improvement.

Collingswood, N. J.—Town will construct a new sewage disposal plant and filter beds, and extend the pipe line about three miles; estimated cost, \$10,000.

Paterson, N. J.—The Board of Public Works has ordered the construction of sewers on East Thirty-first and Water streets and in Twenty-first avenue.—T. S. Standeven, City Clerk.

Trenton, N. J.—Council has ordered a drain constructed in private lands between West State street and Hermitage avenue.—H. B. Salter, City Clerk.

Albuquerque, N. M.—City has sold 290,000 bonds for the construction of the proposed sewer system; bids will be received in about one month.—J. B. McManus, City Clerk.

Albany, N. Y.—Council is considering the sewerage on Kent and Morris streets.

Brooklyn, N. Y.—The Richmond Hill Board of Trade is urging the immediate laying of sewers in that section; Consulting Engineer J. J. McLaughlin has prepared specifications providing for both storm water and sanitary drainage.

Buffalo, N. Y.—Mayor J. N. Adam has approved the bill providing for an appropriation of \$150,000 for work on the Swan street sewer.

Sag Harbor, N. Y.—A friend of Sag Harbor, who has materially aided the village in the last two years by liberal donations to public works and church charities, has signified her willingness to contribute a sum sufficient to pay the cost of one-half the installation of a modern sewer system; Waring, Farquhar & Co., of Manhattan, have made a plan of survey for sewers at Sag Harbor, taking in the principal thoroughfares of the village; minimum cost was \$34,000; matter is to be taken up at once by the local Board of Trade.

South Nyack, N. Y.—Citizens have voted to issue \$12,000 bonds for the construction of a sewerage system.

Syracuse, N. Y.—Commissioner of Public Works F. M. Westcott has estimated the cost of building a 12-inch pipe sewer in Stolp avenue from Arthur street to Roberts avenue at \$2,750.

Utica, N. Y.—The plans for the construction of storm water sewers between Genesee, Oneida, Pleasant and Prospect streets have been prepared by City Engineer O'Brien and presented to the Board of Contract and Supply; an ordinance has been adopted providing for rebuilding that portion of this sewer lying between the New York Central Railroad and the Mohawk River.

Utica, N. Y.—Council has decided to build storm water sewers in Warren and Holland avenues, Ellen and Prospect streets and Baker avenue; cost, \$25,000.

Canton, N. C.—City is considering the laying of sewer mains.—J. W. Scott, Town Clerk.

Durham, N. C.—The Board of Aldermen has decided to connect the new Watts Hospital with the city sewer.

Guthrie, Okla.—Bids will be received, March 31, 4 P. M., for constructing District sewers No. 48.—E. W. Kinnan, City Clerk.

McAlester, Okla.—Bids will be advertised soon for the construction of a sewer; cost, \$140,000.—J. M. Gannaway, City Clerk.

Harrisburg, Pa.—Council has authorized the construction of a sewer in Sixteenth street; also a terra-cotta sewer in Agate street.

Harrisburg, Pa.—Mayor Meals has signed an ordinance authorizing the construction of a terra-cotta pipe sewer on North street.

Hazleton, Pa.—Council is considering the extension of the West Hazleton sewer system.

Monaca, Pa.—Council is considering the extension of the Fifteenth street sewer;

proposed extension will require an additional 6,000 feet of sewer on Atlantic avenue.

Mt. Gretna, Pa.—The State will install a new sewerage system through the entire camp grounds; Col. Wm. F. Richardson, Harrisburg, has the matter in charge.

Philadelphia, Pa.—Plans for a monster sewage disposal plant to provide for the entire municipality and to cost in the neighborhood of \$50,000,000 are being considered by Director Stearns, of the Department of Public Works, and Chief Webster.

Providence, R. I.—City is securing rights-of-way for the big sewer to run from the Olneyville section to the Silver Lake district.

Columbia, Tenn.—A permanent survey for the systematic sewer system for Columbia has been started by Civil Engineer C. J. Akin, assisted by Sam Caperton.

Nashville, Tenn.—Council will memorialize the Legislature to enable Nashville to issue \$500,000 trunk sewer bonds.

Cuero, Tex.—City will install a sewerage system; estimate is being prepared.

Galveston, Tex.—City is considering construction of a reinforced concrete drain along Twenty-sixth street; will require 1,450 linear feet of 3 foot 2 inch by 6-foot concrete drain, together with lateral connections and appurtenances.—V. E. Austin, Commissioner of Streets and Public Property; A. T. Dickey, City Engineer.

Orange, Tex.—Citizens will vote in April on \$14,000 bonds to purchase sanitary sewer system.

Seymour, Tex.—Citizens have voted sewerage system bonds.

Seattle, Wash.—Council has passed bills for the construction of sewers in various streets.

Fairmount, W. Va.—Property owners in the Eighth Ward have asked for the extension of sanitary sewer.

Janesville, Wis.—City Engineer C. V. Kerch is preparing plans for 330 feet of sewer on Glen street, 530 feet on Prairie avenue, 1,020 feet on Fourth avenue, 930 feet on Fifth avenue, 330 feet on Hyatt street, 375 feet on Yuba street and 390 feet on Division street.

Neenah, Wis.—Bids will be received after April 1 for construction of one mile of sewers.—J. Keating, City Clerk.

BIDS RECEIVED AND CONTRACTS AWARDED

Birmingham, Ala.—C. M. Burkhalter, city, has been awarded contract by the Jefferson County Sanitary Commission, at \$12,096, for constructing sanitary sewer to extend from Elyton to West End.

Joliet, Ill.—The Board of Local Improvements has awarded contract for the sewer and water mains in Hunter avenue, from McDonough street to a point 100 feet south of Morgan street to William Tunny as the lowest bidder; there was a complication in the matter, caused by the Engineering Department omitting one small item of excavation from the bidding sheet furnished to Mr. Tunny, and as a consequence that item was found missing from his bid when the bids were opened. When the omission was discovered Mr. Tunny made a verbal bid of \$37.00 to cover it. The matter was submitted to Assistant City Attorney Burke for decision. He gave the Board an opinion in the case to the effect that as the error was chargeable to the Engineering Department the bidder was not responsible for it, and could be permitted to amend his bid. The opinion was given in ignorance of the fact as to the lowest bid, whether it was that of Mr. Tunny or one of the other bidders. The opinion was made a part of the record. The City Engineer reported the amounts of the four bids submitted for the sewer and the water main separately and in the aggregates. The Tunny bid was \$1,955.50 as originally presented and \$1,992.50 with the omitted item included. The next lowest bid was that of Monahan Brothers, \$2,077.60, or \$85.10 in excess of the Tunny bid. The bid of William Moran was \$2,492.25, and that of the Ross & Curtis Stone Company, \$2,549.15. Monahan Brothers protested against permitting Tunny to amend his bid, but the protest was overruled.

Quincy, Ill.—Rees Bros., city, have been awarded contracts on March 15 by the Board of Local Improvements for the construction of both sections of the North End sanitary sewer, at \$40,487.—F. L. Hancock, City Engineer.

Reinbeck, Ia.—Schirke & Son, of Dubuque, have secured contract for constructing sewer system at \$15,500.

Washington, Kan.—Contracts for the sanitary sewers were let March 22 to the Engineering and Construction Company, of Webb City, Mo., at \$23,749.71; other bids were: Wm. F. Hall, Clinton, Mo., \$25,541.69; Geo. M. King, Des Moines, Ia., \$26,008.79; Kewanee Sanitary Supply Company, Kewanee, Ill., \$26,181.04; Derr Bros., Okla-

homa City, Okla., \$28,269.99; Freeborn Engineering Company, Kansas City, Mo., \$28,909.99.

The septic tank contract was also let to the Engineering and Construction Company at cost of labor plus 10 per cent, the city to furnish all material.—Burns & McDonnell, Kansas City, Mo., Engineers.

Louisville, Ky.—Proposals for a contract providing for the construction of Section A, of the Middlefork Sewer, were received, Mar. 19, by the Louisville Sewerage Commission from three big construction companies, and competition was close at the letting on account of the \$50,000 stipulation in the contract. E. G. Nave & Bros. Co., Portsmouth, O.; C. T. McCracken & Co., Columbus, O., and the Henry Bickel Company, of Louisville, were the bidders; the last-named concern, it is said, submitted the lowest and best bid and will likely be awarded the contract.

Ann Arbor, Mich.—Bids were opened March 17 by the Board of Public Works for constructing 15,700 feet 8 and 10-inch pipe sewer and the lowest bid was that of Koch Bros., of Ann Arbor, for \$8,377.—E. W. Groves, City Engineer.

St. Paul, Minn.—The new Portland-Albine sewer is to be built by Schreiter & Connolly, who were the successful bidders. Their bid, \$131,519, being the lowest out of a field of seven, the highest of which ran up to nearly \$200,000. The bids were as follows: Schreiter & Connolly, \$131,519; Fielding & Shepley, \$153,850; O'Neil & Preston, \$148,000; J. M. Thornton, \$159,700; Forrestal & Feyen, \$198,830; George J. Grant, \$138,919, and the General Construction Company, \$143,000.

Four sewer contracts, aggregating nearly \$10,000, have been awarded by the Board of Public Works: A sewer on Albemarle, from Front to Geranium; on Cook, from Woodbridge to Albemarle, and on Front, from Woodbridge to Albemarle, was given to O'Neil & Preston on a bid of \$4,993, the Engineer's estimate being \$6,147. The contract for a sewer on Como avenue, between Maryland and Union, was given to Forrestal & Feyen on a bid of \$1,735. Christ Johnson was given the contract for a sewer on Bradley, from Minnehaha to Fauquier, and on Fauquier, from Burr to Bradley, on a bid of \$1,546, while Tereau & Fargaard were given the contract for a sewer on Manomlin, from Stevens to George, on a bid of \$637.80.

Kansas City, Mo.—Bids were opened by the Board of Public Works March 16 for installing a gate valve, pump, motor, etc., and necessary appurtenances on sewer in joint sewer districts 237, 238 and 239 in Sewer Division 1, near bank of Missouri River, and we are informed that the contract has been awarded to A. D. Johnson, for \$12,000, to be completed in four months.

Jersey City, N. J.—The Street and Water Board has awarded to Patrick Connolly the contract for the construction of a reinforced concrete sewer in the Claremont section, which is to parallel the Jackson avenue outlet sewer; the sewer is to cost approximately \$21,727, and Connolly's bid was 99 per cent of the standard; there were three other bidders, Henry Byrne, Michael Curley and Philip Tumulty; the sewer will empty into the New York Bay at Communipaw.

Rochester, N. Y.—The contract for the construction of a sewer and cement walks in Cornelia street was awarded to H. C. Schroeder for \$761.20. The contract for the Greeley street sewer was awarded to Julius Friedrich & Company for \$185.55.

Syracuse, N. Y.—For the construction of a 20-inch pipe sewer in Dillaye avenue, from Burnet avenue to Vann street, and a 15-inch pipe sewer in Vann street, from Dillaye avenue to Greenway avenue, Samuel Bonn was awarded a contract at \$1,558.80; the high bidder was Charles Bonn, at \$2,391.50; other proposals submitted were as follows: Sullivan & Davin, \$1,892; Philip Thomas, \$1,786.50; Alexander Barr, \$1,567; Albert Gaffey, \$1,677; Frank S. Sposato, \$2,038; C. T. Hookway, \$1,760.20; James Swift, \$1,906.50, and Mary E. Gaffey, \$1,838.

A 12-inch pipe sewer in Pharis street, from Lewis street to No. 213 Pharis street, went to Mary E. Gaffey, at her low figure of \$540.75; other bids were canvassed as follows: Samuel Bonn, \$604; P. R. Kieley, \$768; James Swift, \$713; Albert Gaffey, \$582.75; Sullivan & Davin, \$667.50; Alexander Barr, \$573; Anthony Sposato, \$609, and Charles Bonn, \$688.

The building of an 8-inch pipe sewer in Randall street, from Colvin street to Purple street was also awarded to Mary E. Gaffey, her bid being \$770.25, the lowest received; other bidders for this work were as follows: Sullivan & Davin, \$937; Philip Thomas, \$986.80; Samuel Bonn, \$837.50; James Swift, \$802; C. T. Hookway, \$941; Albert Gaffey, \$790.50; Alexander Barr, \$772; E. G. Dakin, \$848.20, and P. R. Kieley, \$903.50.

The last sewer awarded was one to be built 8 inches in diameter in Pennsylvania avenue from Wolf street for a distance of

230 feet east on that thoroughfare; Samuel Bonn also got this job for \$256.50 against seven bidders; they were as follows: Sullivan & Davin, \$271.50; Mary E. Gaffey, \$294; Philip Thomas, \$266.20; Charles Bonn, \$322.75; James Swift, \$277.60; C. T. Hookway, \$302.50, and Albert Gaffey, \$290.85.

Dayton, O.—The lowest bidder on the sanitary sewers in the East End, proposals for which were received Mar. 18, is George Waller & Co., of West Pittsburg, at \$16,133.72. The Engineer had figured the estimated cost to be near \$22,000. George R. Hively, of Dayton, was the next lowest bidder, his figures going to \$16,572.90, and S. E. Irvin & Bro., of Greenville, were next, at \$16,590.65. There were ten bids submitted, the highest coming from the William McCarthy Company, of Pittsburg, at \$20,427.50.

Kingfisher, Okla.—Contract for the main sanitary sewer was let, March 15, to T. W. Roberts, Chickasha, Okla., for \$5,106.80.

Tonkawa, Okla.—C. H. Whipple, city, has been awarded contract for constructing main sanitary sewer at \$4,393.30.—Burns & McDonnell, Kansas City, Mo., Engineers.

McKeesport, Pa.—Although Councils has never authorized the lowering of an old or the building of a new sewer in Locust street between Ringgold street and Fifth avenue, and although it has not been approved by the State Board of Health, the Street Committee of Councils, March 22, awarded to Hohman & Cardwell a contract to lay a sewer between the points mentioned at a cost of \$400.

Philadelphia, Pa.—Bids, opened Mar. 20, for fifty small sewers, repairs to inlets and manholes, and repairs to the floor of the Mingo Creek pumping station, brought out about fifty bidders. Among the number were the Millard Construction Company, Mack Paving and Construction Company, Michael O'Rourke, Edwin S. Vane and James McMahon. The total amount of all the estimates is \$150,000, varying from a few hundred dollars up to several thousands. Many of the contractors bid on each item, and some time will be required to schedule the bids.

Aberdeen, S. D.—Council has awarded the sewer construction contracts for the coming year to J. Donegan, Shenandoah, Iowa. The following other firms also submitted bids: J. Kennedy, Fargo; Pastorel & Lawrence, Duluth; Tanner Brothers, Minneapolis; Ilstrup Brothers, Minneapolis; Cook Construction Company, Des Moines; James A. Trone, LaCrosse.

WATER SUPPLY

Anniston, Ala.—Citizens have voted \$12,000 bonds for the establishment of a new water works plant.

Dothan, Ala.—Council is considering ordinance providing for \$20,000 bond issue for extension of water, sewer and light systems.

Jacksonville, Ala.—Citizens have voted \$12,000 bonds for water works.—S. R. Wilkerson, Mayor.

Globe, Ariz.—Citizens will vote April 14 on a \$275,000 expenditure for purchasing the water works and building a sewer system.

Little Rock, Ark.—M. B. Moore, 1505 Welch street, Little Rock, Ark., will purchase tank and water tower of 40,000 gallons capacity.

McGehee, Ark.—Nicholas Peay, Little Rock, Ark., has been selected to prepare plans for \$20,000 water works system.

Eureka, Cal.—The Eureka Water Works Company will expend about \$70,000 in improvements.

Imperial, Cal.—City has decided to vote on \$50,000 bond issue to install a domestic water works system.

Long Beach, Cal.—Citizens have defeated proposition to bond city to acquire a water works system.

Palo Alto, Cal.—Citizens will vote on \$5,000 bonds for new tanks and a new well.

Sacramento, Cal.—Professor Chas. Gilbert Hyde, University of California, has been selected to prepare preliminary plans for a municipal filtration plant.

Sacramento, Cal.—City Engineer Randle has recommended the installation of an additional pumping unit at the city pumping station.

San Francisco, Cal.—Difficulty in securing a fair freight rate from the railroads has about decided the members of the Board of Public Works to call for new bids on the \$1,000,000 contract for the cast-iron pipe to be used in the construction of the auxiliary fire system.

San Francisco, Cal.—City has completed plans for 90 cisterns.

San Francisco, Cal.—The Board of Public Works has rejected bids for constructing seven cisterns and new bids will be called for; lowest bid was submitted by Healy, Tibbets & Co., \$41,850.

San Jose, Cal.—Fire Chief Brown has

recommended numerous changes and extensions to present water system.

Pueblo, Col.—The Oxford Farmers' Ditch Company has decided to construct a reservoir near Fowler, to be known as the Chicos reservoir.

Wilmington, Del.—Council will consider ways and means to provide the cost of a new filter plant; request for the sale of \$345,000 bonds will be granted.

De Funiak Springs, Fla.—Citizens will vote April 15 on \$12,000 water works bonds.—Address the Mayor.

Augusta, Ga.—City Engineer Wingfield will soon take up the plans for the pumping house, which will be erected on the canal near the old pumping station. The building will be started as soon as possible and the work will be rushed to completion; cost, \$10,000.

Hazlehurst, Ga.—Citizens have voted \$18,000 bonds for construction of water works.

Centerville, Ill.—Town has decided to ask bids about May 1 for improving its water works system.—E. Phill, Chairman Water Works Committee.

Flora, Ill.—Plans have been completed by Engineer J. S. Spiker, Vincennes, Ind., for a system of water works; bids will be received by the Board of Local Improvements.—E. S. Cunningham, Mayor.

Lockport, Ill.—City will sell its water works.

South Marion, Ind.—City will extend mains in West Thirty-third street.—Superintendent Hulley.

Edgewood, Ia.—Citizens will vote in April on bonds for the installation of a water works system.

Marshalltown, Ia.—Citizens will vote in April on municipal water works proposition.

Marion, Kan.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have plans in progress for the new municipal water works and lighting plant; approximate cost, \$60,000.

Newport, Ky.—Council has passed an ordinance providing for the issue of \$85,000 bonds for water works improvements.

Baltimore, Md.—A surveying corps has begun work making a survey of the Western Run Valley in Baltimore County for the engineers who are to prepare plans for the proposed 20,000,000-gallon reservoir; either of the sites most favored will call for a dam of 80 feet.

Catonville, Md.—The Baltimore County Water and Electric Company has petitioned town for a franchise to lay 8,400 feet of 6-inch water mains along Francis, Selma and Ridge avenues, and 1,830 feet of 4-inch mains in the adjoining neighborhood.

Brockton, Mass.—City will spend \$37,500 in extending mains and service connections.—John S. Kent, Mayor.

Marblehead, Mass.—City will install a filtration plant; cost, \$15,000.—W. A. Johnson, of Boston, Engineer; J. E. Price, Chairman Water Board.

Medway, Mass.—About \$50,000 will be expended for a water supply system.

Nahant, Mass.—Town has voted a \$350 appropriation to complete sewer at Bass Point.

New Bedford, Mass.—The Water Board expects during the present season to duplicate their 36-inch cast-iron main from High Hill reservoir to the city, about three miles.

Buckley, Mich.—City will issue \$5,000 bonds for water works.

Detroit, Mich.—Council has allowed an estimate of \$40,000 for running an iron supply water main under the Detroit River to Belle Isle Park, under direction of the Department of Parks and Boulevards.—M. P. Huribut, Secretary.

Dowagiac, Mich.—The contract was let for steam pumps for water works system, on changing present water works to take water from Pine Lake, including erection of standpipe; also a producer gas plant; Consulting Engineer will be employed to prepare plans and specifications.

Brainerd, Minn.—Citizens of the Third Ward have decided to circulate a petition for the organization of a sewer district in that ward and the putting in of a system of district and lateral sewers; there will also be sewers constructed in the Fourth and Fifth wards, as preliminary steps in these wards have been taken; Council will authorize the sale of \$30,000 revolving fund improvement bonds.

Red Wing, Minn.—Citizens will vote April 27 on \$7,500 bond issue for a storage basin.

Senatobia, Miss.—The Board of Aldermen is considering the extension of the water works system.

Elgin, Neb.—Plans are being prepared by Engineer J. W. Early, Columbus, Neb., for a system of water works.—U. G. Robinson, Village Clerk.

Litchfield, Neb.—Bids will be received about April 1 for a water system; cost, \$10,500.—R. P. Moore, Village Clerk.

Buffalo, N. Y.—The Board of Aldermen has adopted the Mayor's recommendation that the Corporation Counsel draft a bill to

be forwarded to the Legislature to enable the city to issue bonds to complete new water mains and other adjuncts of the city's new pumping plant and water supply; Commissioner Ward has estimated that \$1,000,000 will be required to complete the necessary work.

Freeport, L. I., N. Y.—Citizens have voted \$10,000 for extensions to water system.

Newburgh, N. Y.—The Water Board has asked Council to call a special election on \$158,000 to enlarge the water works.

New York, N. Y.—The Board of Estimate has authorized nearly 100 improvements of different sorts in the five boroughs, the total cost of these to be more than \$600,000; Board authorized the Department of Water Supply, Gas and Electricity to purchase 15 acres of land in the vicinity of Valley Stream for the right-of-way of the 72-inch water main which the department is building to connect the Brooklyn water supply with the new watershed at Massapequa.

Rochester, N. Y.—A recommendation by City Engineer Fisher to extend a 16-inch hemlock water main across Driving Park avenue bridge and a 12-inch hemlock main across Central avenue bridge has been approved by the Water Works Committee.

Rochester, N. Y.—Bids will soon be called for extending the water main across the Erie canal at Felix street.

Rockville, L. I., N. Y.—Citizens have voted \$2,000 to extend the water mains.

Spencerport, N. Y.—Citizens have voted to expend \$400 for survey and investigation to ascertain cost, etc., of water works and sewers.

Warsaw, N. Y.—Citizens have voted \$4,000 for the improvement of the water system.

West Carthage, N. Y.—Citizens have voted to issue \$30,000 bonds for the construction of water works.—W. G. Stone, of Utica, Engineer.

Charlotte, N. C.—City will extend water mains to East Charlotte.

Cincinnati, O.—The Board of Public Service has asked for \$100,000 to lay a 30-inch main on Spring Grove avenue and a 4-inch main on Dana avenue.—Commissioner Laidlaw, President.

Cleveland, O.—City will readvertise for bids on water meters.

Cleveland, O.—A report on the necessity of water filtration and the furnishing of an independent water supply to the West Side has been submitted to the Board of Public Service and Superintendent Bemis of the Water Department by Consulting Engineers George H. Benzenberg, of Milwaukee, and Rudolph Hering, of New York; the two engineers have agreed that the filtration of Cleveland's water supply is unnecessary at present and that the extension of the West Side tunnel to a point three miles beyond the present West Side intake is advisable; total cost, \$1,000,000.

Crooksville, O.—The company headed by A. W. Evans and James Blockson, of Youngstown, will secure the contract for furnishing this city with a water supply.

Dayton, O.—The Superintendent of Water Construction has been ordered to proceed with the laying of water mains in Chester avenue from Superior to Grand avenue.

Dayton, O.—The National Board of Fire Underwriters has recommended the erection of a reservoir, to be located on the hill northwest of the city, and which would hold 20,000,000 gallons of water.

Lima, O.—Proposals will be received at the office of the Lima Water Works Department March 31, noon, for the following materials, f.o.b. cars, Lima, O: 2,200 feet of 8-inch standard cast-iron water pipe, 1,000 feet of 6-inch pipe, 1,200 feet of 4-inch pipe, and about 1,000 pounds of specials.—O. W. Regan, Secretary Board of Public Service.

Miamisburg, O.—Engineer Riley will prepare an estimate of the cost of laying contemplated water mains.

Niles, O.—Secretary Probst, of the State Board of Health, has recommended an improved water supply; also repairs to the pumping machinery; cost, \$6,000.

St. Henry, O.—The State Board of Health has approved plans for a water supply.

Swanton, O.—The State Board of Health has approved detailed plans and specifications for the development of the public water supply.

Toledo, O.—Bids will be received April 7 for the purchase of \$100,000 4 per cent water works filtration bonds.—Amos McDonnell, City Auditor.

Alva, Okla.—Citizens will vote April 6 on \$10,000 bonds to extend reservoir.

Hydro, Okla.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have prepared plans for water works and lighting plant; cost, \$25,000.

Kiowa, Okla.—Citizens have voted \$31,000 water works and electric light bonds.

Lawton, Okla.—Planning for material extensions of the present water works system, chiefly consisting in the erection of an immense dam across Medicine Creek,

above Fort Sill, to form a city reservoir. Council has selected a Special Committee whose duties shall be to look into the legal points connected with the bond issue and prepare resolutions providing for an election in April on \$100,000 bonds.

Lehigh, Okla.—Citizens have voted \$42,500 bonds for water works; O'Neill Engineering Company, Dallas, Tex., will have charge.

Minco, Okla.—City will let contracts early in April for material and for construction of water works and electric light plant; cost, about \$25,000 for both.—Burns & McDonnell, Engineers, Kansas City, Mo.

Okemah, Okla.—Citizens have voted \$55,000 bonds for water system and electric light.

Wynnewood, Okla.—City will extend water works; \$14,000 bonds available; stand pipe will be erected.—T. B. Rollow, Mayor.

Myrtle Point, Ore.—City will receive bids April 25 for \$22,000 water works bonds.—I. E. Rose, City Recorder.

Bethlehem, Pa.—Council has finally passed ordinance for the erection of a \$175,000 water plant.

Bradford, Pa.—Plans and estimates will be prepared for increased capacity of the municipal reservoir.

Mechanicsburg, Pa.—Village is considering construction of a water works system.

Bennettsville, S. C.—Steps have been taken looking to the issuing of additional bonds to the amount of \$13,000 for the purpose of putting water works and sewerage on certain streets not heretofore provided for.

Rock Hill, S. C.—The Solomon-Norcross Engineering Company, of Atlanta, has completed the survey of a proposed sewerage route to the river and furnished the estimate for a filtering plant and pumping station.

Gregory, S. D.—Citizens have voted bonds for the extension of the water works system.

Cleveland, Tenn.—Citizens have voted an issue of \$60,000 bonds, \$50,000 to purchase plant of Cleveland Water Company and \$10,000 for improvements and extensions.—Charles S. Mayfield, Mayor.

Mt. Pleasant, Tenn.—Council has adopted a resolution asking the County Election Commissioners to call an election to vote on issuing not to exceed \$65,000 of the bonds of the corporation of Mt. Pleasant for the purpose of building water works.

North Memphis, Tenn.—F. H. Wardey, Tennessee Inspection Bureau, has recommended the installation of a 100,000-gallon water tank in the center of the lumber district from which a perfect sprinkler system could be constructed.

Cleburne, Tex.—The Cleburne Water Works Company will issue \$50,000 worth of receivership certificates; proceeds will be used in laying mains and extending the water system.

Dallas, Tex.—Ninth Ward citizens are urging the proposed bond issue for the enlargement of the water works system in Oak Cliff.

Lubbock, Tex.—Citizens now have under consideration a proposition to sink a well 3,000 feet or more, if necessary, for artesian water.

Santa Anna, Tex.—Citizens will vote April 13 on \$25,000 water works bond issue.

Wolfe City, Tex.—City will receive bids April 5 for \$2,500 water improvement bonds.—E. S. Royal, Mayor.

Ogden, Utah.—Bids will be received in a short time for the construction of an earthen distributing reservoir for the water works department; estimated cost, \$18,000.—A. F. Parker, City Engineer.

Salina, Utah.—Bonds, \$20,000, are to be sold for the construction of water works.—Richard P. Lyman, Salt Lake City, Engineer; A. S. Crane, Town Clerk.

Burlington, Wash.—City has granted a franchise to Sydney Smith to install a water works system; cost, \$75,000.

Georgetown, Wash.—The Georgetown Company has applied for permission to lay 6-inch mains on Roosevelt, Wellington and other streets to be graded.

Seattle, Wash.—Council has passed bills for the laying of water mains in various streets and the extension of pipes to West Seattle.

Charleston, W. Va.—City has authorized the drilling of three cisterns.

Fairmont, W. Va.—Council is considering an ordinance providing for a water works bond issue.

Parkersburg, W. Va.—The Second-Hand Pipe and Supply Company, Avery and Third streets, Parkersburg, W. Va., will purchase 6,000 feet second-hand 6¼-inch 12-pound 11½-thread casing.

Parkersburg, W. Va.—The Water Works Commission has consulted L. E. Chapin, Expert Engineer, of Pittsburg; Commission also induced Council to pass bond issue of \$275,000 to be used in constructing a complete new water works system.

Black River Falls, Wis.—The Water Commissioners have decided to construct a reservoir of 400,000 gallons capacity.

Colfax, Wis.—Citizens are considering the installation of a water works system.

Claresholm, Alta., Can.—A gravity system of water works will be installed at a cost, estimated by Engineer Arnold, of \$54,000.

Pembroke, Ont., Can.—The Water Works Committee will secure plans for a new water works system.

Port William, Ont., Can.—City will purchase 386 water meters.

BIDS RECEIVED AND CONTRACTS AWARDED

Mesa, Ariz.—The contract for the construction of the new Highland Canal has been let to W. T. Smith & Co., at \$63,000; work is to be completed before Nov. 1, 1909.

San Francisco, Cal.—Two bids for seven more fire cisterns were opened by the Board of Public Works, March 12, and rejected; the bids were: Healy-Tibbitts Construction Co., 268 Market street, \$41,850; the American Construction Co., 338 Pine street, \$49,990.

Ingelwood, Col.—Town has awarded contract to the Consolidated Engineering Co., of Denver, for the installation of a water works system, the pumping plant to include two units, the first consisting of a triplex pump, connected to a 3-phase, 440-volt, 60-cycle motor, the second a horizontal centrifugal pump direct-connected to a motor similar to that of the triplex pump; pumps will have a capacity of 250 gallons per minute and will be automatically controlled by the Sundh Electric Company's regulators.

Colfax, Ill.—Contract for constructing water works has been awarded to the Leader Iron Works, of Decatur, for \$5,850.

Moline, Ill.—F. E. Kaminsky, of Watertown, Wis., has secured the contract for about 11,240 feet 6 and 4-inch water pipe, with valves and hydrants, for \$10,312, and same contractor for 25,812 linear feet 15 to 6-inch pipe sewer for \$23,865. Other bids received for this work were as follows:

New York, N. Y.—Bids were received March 9 by the Board of Water Supply for Contract 22, Bull Hill Tunnel, Hudson River Division, Catskill Aqueduct, total bids being submitted as follows by the Dravo Contracting Company, 814 Lewis Block, Pittsburg, Pa., \$728,424; the Snare & Triest Company, 143 Liberty street, New York, \$823,417; Patterson & Co., 509 Fitzsimmons Bldg., Pittsburg, Pa., \$824,942, awarded contract; J. C. Rodgers & Co., 121 West 125th street, New York, \$852,650; Bradley Contracting Company, 1 Madison avenue, New York, \$872,505; the Metropolitan Contracting Company, 95 Milk street, Boston, Mass., \$901,232; Millard Construction Company, Philadelphia, Pa., and 2 Rector street, New York, \$915,021; Gore-Meenan Co., 206 Broadway, New York, \$921,925; Mason & Hanger Company, Richmond, Ky., \$951,581; the Degnon Contracting Company, 60 Wall street, New York, \$959,037; S. Pearson & Son, Inc., Long Island City, N. Y., \$1,014,651; Henry P. Burgard Company, 275 Lathrop place, Buffalo, N. Y., \$1,032,770; the Phoenix Construction Company, 41 Park Row, New York, \$1,049,697; American Pipe and Construction Company, 112 North Broad street, Philadelphia, Pa., \$1,097,095; the Glyndon Contracting Company, 2 Rector street, New York, \$1,161,707.

Following are the details of the three low bids: the Dravo Contracting Company, (a); the Snare & Triest Company, (b), and the third lowest and successful bid, Patterson & Co., (c).

	(A)	(B)	(C)
5,000 cu. yds. removal of top-soil.....	\$0.50	\$0.70	\$0.50
22,000 cu. yds. open-cut excavation, Station 830 to Station 835 + 55.....	.95	1.00	1.00
48,000 cu. yds. open-cut excavation, Station 889 + 20 to Station 900 + 50.....	.95	1.00	.75
7,000 cu. yds. open-cut excavation, Station 900 to Station 903 + 50.....	.95	1.30	1.50
8,000 cu. yds. open-cut excavation, Station 903 + 50 to Station 907 + 55.....	.95	1.00	1.50
7,000 cu. yds. refilling and embanking, Station 830 to Station 835 + 55.....	.25	.40	.50
19,000 cu. yds. refilling and embanking, Station 889 + 20 to Station 900.....	.25	.40	.50
7,000 cu. yds. refilling and embanking, Station 900 to Station 903 + 50.....	.25	.40	.50
6,000 cu. yds. refilling and embanking, Station 903 + 50 to Station 907.....	.25	.40	.50
5,000 cu. yds. surface dressing and grading.....	.50	.50	.60
12,500 cu. yds. concrete masonry for aqueduct in open cut and on embankment.....	5.10	5.80	5.50
1,000 cu. yds. concrete masonry for culverts, retaining-walls, etc.....	7.00	6.80	6.00
1,000 cu. yds. dry rubble masonry and paving.....	4.00	3.00	4.00
200 cu. yds. crushed stone and gravel.....	1.60	2.00	2.00
1 sluice-gate.....	80.00	80.00	100.00
1 ton cast-iron pipes and special pipe castings.....	100.00	80.00	100.00
500 lin. ft. vitrified pipe.....	1.60	1.50	2.00
30 M. ft. B. M. timber and lumber.....	55.00	60.00	60.00
3 portions testing portions of aqueduct.....	800.00	1,000.00	1,000.00
1,000 lin. ft. of excess testing portions of aqueduct exceeding 200 ft. in length.....	3.00	2.00	3.00
58,000 cu. yds. rock excavation in tunnel.....	5.05	6.00	6.00
500 sq. yds. additional trimming in tunnel.....	4.00	4.00	7.00
3,200 cu. yds. earth excavation in tunnel.....	4.00	4.00	4.50
100 cu. yds. enlargement of tunnel section in earth.....	4.00	12.00	5.00
250 M. ft. B. M. permanent timbering in tunnel.....	55.00	70.00	70.00
50 M. ft. B. M. temporary timbering in tunnel.....	60.00	70.00	60.00
5,365 lin. ft. of tunnel drainage.....	1.60	1.50	1.50
5,365 lin. ft. of tunnel forms for masonry lining in tunnel.....	3.00	4.00	3.00
17,000 cu. yds. concrete masonry in tunnel.....	5.85	5.50	6.50
1,000 cu. yds. excess concrete masonry in tunnel.....	2.50	2.50	2.50
200 cu. yds. brick masonry in tunnel.....	16.00	14.00	14.00
3,000 cu. yds. dry packing.....	2.25	2.50	1.50
400 lin. ft. drilling holes in rock or masonry.....	.40	.70	1.50
1,500 lin. ft. steel pipes for grouting.....	.25	.40	.50
44,000 lbs. Portland cement.....	1.70	1.90	1.70
1,000 cu. yds. grout of Portland cement.....	6.25	6.00	8.00
6,500 lin. ft. stone boundary walls.....	1.60	1.20	1.25
2,500 lin. ft. fences and guard-rails.....	.40	.40	.35
15,000 lbs. steel for reinforcing concrete.....	.03	.04	.06
2,000 lbs. wrought iron, cast iron and steel.....	.08	.06	.05
1,000 lbs. bronze.....	.80	.50	.80
Cleaning up (lump sum).....	4,000.00	3,000.00	5,000.00

Time: 38 months. Bond required: \$250,000.

New York, N. Y.—Bids were received, March 11, by the Board of Water Supply for Contract 23, Croton Division, of the Catskill Aqueduct, including Hunters Brook and Scribner Tunnels and Yorktown cut-and-over. The total bids are as follows: Robert C. Storrie, Nice Town Lane and G streets, Philadelphia, Pa., \$1,028,915; Gore-Meenan Co., 206 Broadway, New York, \$1,079,660; Glyndon Contracting Co., 2 Rector street, New York, \$1,109,102, awarded contract; Sundstrom & Stratton, 90 West street, New York, \$1,129,850; Norton & Brown, 215 West 125th street, New York, \$1,156,870; Mason & Hanger Co., Richmond, Ky., \$1,156,702; Snare & Triest Co., 143 Liberty street, New York, \$1,167,605; Degnon Contracting Co., 60 Wall street, New York, \$1,215,265; M. A. Talbot Co., 1110 American Building, Baltimore, Md., \$1,223,520; John J. Hopper, 215 W. 125th street, New York, \$1,280,265; J. Connelly Construction Co., 537 Calvert Building, Baltimore, Md., \$1,281,315; Patrick McGovern, 623 Beacon Building, 6 Beacon street, Boston, Mass., \$1,292,087; Ferguson Contracting Co., 37 Wall street, New York, \$1,376,930; S. Pearson & Son, Inc., Long Island City, N. Y., \$1,418,327; The American Pipe & Construction Co., 112 North Broad street, Philadelphia, Pa., \$1,480,945; J. H. Gray Co., Fuller Building, New York, \$1,921,585.

Following are the details of the three lowest bids: Robert C. Storrie, (a); Gore-Meenan Company, (b), and the third lowest, and successful bidder, Glyndon Contracting Company, (c):

	(A)	(B)	(C)
23,000 cu. yds. removal of top soil.....	\$0.40	\$0.50	\$0.35
24,000 cu. yds. open-cut excavation, Station 18 to Station 20, Type A .....	.51	.50	.60
108,000 cu. yds. open-cut excavation, Station 81 + 50 to Station 107 + 50, Type A .....	.90	.95	.50
17,000 cu. yds. open-cut excavation, Station 110 + 50 to Station 120, Type A	1.10	1.50	.65
25,000 cu. yds. open-cut excavation, Station 120 to Station 137, Type B .....	.85	.95	.45
7,000 cu. yds. refilling and embanking, Station 18 to Station 20 ..	.30	.30	.25
42,000 cu. yds. refilling and embanking, Station 81 + 50 to Station 107 + 50 .....	.30	.30	.25
11,000 cu. yds. refilling and embankment, Station 110 + 50 to Station 120 .....	.35	.40	.25
20,000 cu. yds. refilling and embanking, Station 120 to Station 137 ..	.25	.30	.23
15,000 cu. yds. surface dressing and grassing.....	.75	.50	.50
25,000 cu. yds. concrete masonry for aqueduct in open cut and on embankment	5.00	4.50	5.25
400 cu. yds. concrete masonry for culverts, retaining walls, etc.	6.00	7.00	5.25
100 cu. yds. rubble masonry and paving in mortar.....	3.50	4.50	4.00
400 cu. yds. dry rubble masonry and paving.....	3.00	2.50	2.50
5,000 cu. yds. crushed stone, gravel and material, for filters.....	2.00	2.00	2.25
2 sluice gates	100.00	150.00	125.00
1 ton cast-iron pipes and special pipe castings.....	150.00	150.00	100.00
3,000 lin. ft. vitrified pipe.....	1.50	1.00	1.00
30 M. ft. B. M. timber and lumber.....	50.00	60.00	65.00
3 portions testing portions of aqueduct.....	1,000.00	1,200.00	1,000.00
800 lin. ft. of excess testing portions of aqueduct, exceeding 200 ft. in length.....	2.00	2.00	1.50
68,000 cu. yds. rock excavation in tunnel.....	5.10	5.75	6.75
800 sq. yds. additional trimming in tunnel.....	5.00	5.00	3.50
6,000 cu. yds. earth excavation in tunnel.....	4.00	4.50	3.50
100 cu. yds. enlargement of tunnel section in earth.....	15.00	10.00	3.50
400 M. ft. B. M. permanent timbering in tunnel.....	50.00	60.00	60.00
75 M. ft. B. M. temporary timbering in tunnel.....	50.00	50.00	45.00
6,450 lin. ft. of tunnel drainage.....	1.00	1.00	1.00
6,450 lin. ft. of tunnel forms for masonry lining in tunnel.....	1.50	3.00	2.75
20,000 cu. yds. concrete masonry in tunnel.....	5.25	4.80	5.75
800 cu. yds. excess concrete masonry in tunnel.....	2.50	2.50	2.50
200 cu. yds. brick masonry in tunnel.....	15.00	15.00	18.00
3,500 cu. yds. dry packing.....	2.50	2.50	2.50
200 lin. ft. drilling holes in rock or masonry.....	1.00	1.00	.60
800 lin. ft. steel pipes for grouting.....	.50	.50	.50
65,000 bbls. Portland cement.....	1.70	1.65	1.90
200 cu. yds. grout of Portland cement.....	8.00	5.00	6.00
14,000 lin. ft. stone boundary walls.....	1.25	.90	1.25
5,000 lin. ft. fences and guard-rails.....	.50	.40	.42
30,000 lbs. steel for reinforcing concrete.....	.05	.05	.05
2,000 lbs. wrought-iron, cast-iron and steel.....	.10	.08	.06
1,000 lbs. bronze .....	.70	.60	.60
42 months medical and surgical practitioners.....	150.00	200.00	125.00
42 months sanitary services.....	150.00	300.00	200.00
Cleaning up (lump sum).....	3,000.00	1,500.00	3,000.00
Time, 42 months. Bond required, \$240,000.			

The Bradley Contracting Company, 1 Madison avenue, New York, submitted a blank bid.

awards the bids of four firms all lower than the winner were rejected. For the Yorktown job both the Robert C. Storrie Company and the Gore-Meenan Company were lower than the Glyndon Contracting Company. In the Bull Hill competition the Dravo Contracting Company and Snare & Triest were both lower than Patterson & Co. The Commission investigated all bids and says its decisions do not reflect upon the lowest bidder, who, in some cases, were without experience in tunnel building.

The Bradley Contracting Company, headed by William Bradley, partner in the Bradley, Gaffney, Steers Company, which is bidding for the Lexington Avenue subway will probably be awarded Contract No. 24 for the Turkey Mountain grade tunnel, situated about six miles northeast of Croton-on-Hudson in the town of Yorktown, Westchester County. Its bid is \$973,694, and is the lowest; other bids were: S. Pearson & Son, Inc., Long Island City, \$1,357,674; The Dravo Contracting Co., Pittsburgh, \$1,180,107; Gore-Meenan Co., 206 Broadway, \$1,184,632; American Pipe and Construction Co., Philadelphia, Pa., \$1,172,670; The Buffalo Dredging Co., Buffalo, N. Y., \$1,218,275.

For the fourth time bids were opened for the construction of the Wallkill pressure tunnel, more than four miles in length, under the Wallkill River, one of the largest single contracts in the \$162,000,000 plan for the increased water supply from the Catskills; on previous opening of bids, reasons were found to reject them; the first time the lowest bid was thrown out on account of labor troubles; the second time for lack of experience and the third time for suspected collusion. The lowest bid of the nine received was from the Degnon Contracting Company, for \$4,982,726, which concern was awarded contract. The

highest bid was from S. Pearson & Sons, an English firm, which was the lowest bidder on the first advertising. Other bidders were: John C. Rodgers, 121 W. 125th street, \$5,190,777; Bradley Contracting Co., 1 Madison avenue, \$5,353,755; Millard Construction Co., 2 Rector street, \$5,564,262; S. Pearson & Son, Inc., Long Island City, \$6,117,914; Mason & Hanger, Richmond, Ky., \$5,237,820; Booth & Flynn and The Dravo Contracting Co., Pittsburgh, Pa., \$5,247,766; American Pipe & Construction Co., 112 N. Broad street, Philadelphia, \$5,386,070; Buffalo Dredging Co., Buffalo, \$5,965,696.

Roosevelt, L. I., N. Y.—The Directors of the Roosevelt Water, Light and Power Company have awarded contract for erection of a pumping station to David H. Brown, Jr.; the first story is to be of concrete; they also decided to use the air pressure water system, to be stored in tanks with a capacity of 25,000 gallons to the tank; also to commence the installation of 2½ miles of pipe line; the entire plant will probably be completed by October 1; approximate cost, \$22,000.

Rochester, N. Y.—The United States Cast Iron Foundry Company has been awarded the contract for furnishing cast-iron pipe for \$87,180. The Camden Pipe Company telegraphed Clerk Pifer, during the meeting of the Board of Contract and Supply, cutting its bid 15 cents a ton if shipment could be made by water. The Camden Company's bid was still higher with the cut of 15 cents. Other bidders were the Camden Iron Works, \$87,460; Warren Foundry and Machine Company, New York, \$91,760, and Charles Millar Sons Company, Utica, \$91,129.

The contract for furnishing 50 tons of pig lead for the use of the Water Works

Department has been awarded to the Rochester Lead Company, at 4.35 cents a pound. The National Lead Company bid 4.37½ cents per pound, or \$4,350, while its nearest competitor, the National Lead Company, of Buffalo, bid \$4,375.

Muskogee, Okla.—The contract for the two boilers has been awarded the Casey-Hedges Company, of Chattanooga, for \$5,358, and the contract for the big horizontal pump to the Fred M. Prescott Steam Pump Company, of Milwaukee, Wis., for \$13,900.

Lebanon, Pa.—Contract has been awarded to Fritz & Reilly, Lancaster, for the work of enlarging Dam No. 2, with a bid of \$22,530.60; Council has appropriated \$2,000 additional. Details in issue of March 24.

Nashville, Tenn.—The first appropriation from the recent \$200,000 suburban street water main bond issue has been made by the Board of Public Works and the contract has been awarded to W. M. Leftwich, the low bidder, at \$4,543. Other bids were as follows: Sullivan & Hagerty, \$4,830.35; Sneed & Barnsfield, \$9,992; Quinn & Ellis, \$12,351.30; A. J. Webb, \$8,890; John Broderick, \$9,976.56; E. T. Lewis & Co., \$5,488.80.

The Board also awarded a contract to the H. Mueller Manufacturing Company for furnishing the city with several hundred corporation cocks, which are to be used for private connection with the water mains; the contract calls for 600 ½-inch cocks, 50 ¾-inch, 50 ¾-inch and 50 1-inch, the bids being 38.8 cents, 52 cents, 62.25 cents and \$1.03 respectively.

Salt Lake City, Utah.—The following prices were received by the Water Works Department for water meters, pipe and fittings:

Corporation cocks: ¾-inch, 49 cents each; 1-inch, 61½ cents; 1½-inch, 86½ cents. Lead and iron coupling: ¾-inch, 22 cents each; 1-inch, 25 cents; 1½-inch, 36 cents. Standard galvanized pipe: ¾-inch, 4.4 cents per linear foot; 1-inch, 6.3 cents.

Trident meters: 1-inch, \$18.80 each; 1½-inch, \$35; 2-inch, \$45; 3-inch, \$90; 4-inch, \$175.

The contract was awarded to Neptune Meter Company, of Newark, N. J.—L. C. Kelsey, City Engineer.

Lynchburg, Va.—The contract for the erection of two reinforced-concrete reservoirs and laying mains to supply water on Thomas F. Ryan's Nelson County estate has been let to Lane Bros. Co.; estimated cost, about \$20,000.

Riverton, Wyo.—The Wyoming Central Irrigation Co. has let to L. D. Borden a contract for constructing a 6-mile extension to the Riverton ditch; work is to begin immediately.

LIGHTING AND POWER

Camp Hill, Ala.—Citizens will vote on bond issue for electric light plant.

Beebe, Ark.—Local capitalists are figuring on establishing an electric light plant.

Camden, Ark.—Citizens are considering the establishment of a municipal electric lighting plant.

Fayetteville, Ark.—City has granted franchise to N. T. Wagoner, Talleguah, Okla., to install gas plant; cost, \$100,000.

Bodie, Cal.—Two electric power plants will be constructed this spring, one on Rush Creek and the other on Leevining Creek; each plant will have a capacity of 15,000 horsepower and will be able to supply the entire country within a radius of 100 miles.

Montague, Cal.—The Siskiyou Electric Light and Power Company will start work soon on the construction of its proposed 64,000-h.p. plant on the Klamath River at Ward's Canyon.

Palo Alto, Cal.—Citizens will vote on \$3,500 bonds for a street lighting plant and \$3,000 bonds for a steel roof on the power house.

Washington, D. C.—The Providence Hospital will purchase a 100-kw. direct-connected unit; also passenger elevator.

De Funiak Springs, Fla.—Citizens will vote April 15, on a \$10,000 electric light bond issue.

Panama City, Fla.—City is considering the erection of electric light plant and water works.

White Springs, Fla.—The Suwannee River Electric Power Company has about completed plans for the construction of a power plant and dam at the Suwannee River shoals near White Springs.—W. B. Owen, President.

Toccoa, Ga.—J. D. Prather, of Toccoa, and C. G. Rolston, Pittsburg, Pa., are considering the construction of dam on Tugalo River; estimated cost, \$150,000.—R. N. Miles, Representative.

Cabinet Gorge, Ida.—Seventy-five thousand horsepower is to be developed on Clark's Fork in Idaho by the Northern Idaho & Montana Electric Company; plans call for an outlay of approximately \$2,000,000; plant is to furnish light and power to

towns throughout northern Idaho and northwestern Montana.

Wallace, Ida.—City has granted a franchise to the Slate Creek Electric Light and Power Company to operate its system.—H. J. Rogers, Vice-president.

Lincoln, Ill.—A complete change in electric current from the alternating to the direct, incurring an expenditure of \$300,000, is the latest improvement projected by the Illinois Traction system; territory affected will include the lines from Springfield to Peoria and Bloomington and all connecting branches; beside the necessary equipment of all cars with the new motors, eight sub-stations will be built.—H. E. Chubbuck, General Manager.

Evansville, Ind.—The Board of Public Works will install four new street lamps in Westholm; residents have petitioned for the installation of a lamp post at the corner of Illinois street and Wabash avenue.

Hammond, Ind.—The Northern Indiana Gas and Electric Company will erect and equip a new generating plant.

Jasonville, Ind.—The Jasonville Electric Light Company has decided to expend \$4,000 in improvements.

Orland, Ind.—Robert N. Sanderson is considering the installation of an electric plant in his mill and will furnish electricity for lamps in this town; Village authorities have decided to install electric lamps on the streets.

Rushville, Ind.—A. T. Mahin, Superintendent water and light plant, is in favor of improving the electric light plant, including the construction of a new unit, to cost about \$8,000.

South Bend, Ind.—Max Adler and I. W. Lower are promoting a scheme to extend the "New Center" street illumination north to La Salle avenue and an L up Washington street; citizens are urging on Council installation of new electric arches north to Centre street and south to alley between Monroe and Division streets; also on Washington street down to Main.

Carson, Ia.—H. E. Johnson has purchased electric light plant and will make improvements to same.

Marion, Kan.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have plans in progress for the new municipal light and water plant; \$60,000 is available.

Plaquemine, La.—Fire has destroyed the power house of the Plaquemine Electric Light and Power Company.

Oldtown, Mass.—Citizens have decided to install a street lighting system; power to be furnished from the municipal plant at North Attleboro; construction of high-tension line will begin about April 1.—Wm. Plattner, Manager, North Attleboro.

Detroit, Mich.—D. J. Fisher, of the Board of Works, is urging the placing of a stated amount of wires each year under the ground.

Hillsdale, Mich.—Council is considering the expenditure of \$10,000 for improving the electric light plant.

Hattiesburg, Miss.—The Southern Lumber and Ice Company will install electric light and power plant.

Senatobia, Miss.—The Board of Aldermen is considering the extension of the electric light system.

Cassville, Mo.—The Cassville & Western Railway will build power house.—S. M. Mitchell, General Manager.

University City, Mo.—Citizens will vote on \$20,000 bond issue for electric light plant.

Perth Amboy, N. J.—Council is considering the question of municipal lighting; contract with the Middlesex-Monmouth Electric Light, Heat and Power Company will soon expire.

Perth Amboy, N. J.—The Merchants Progressive Association has been formed to urge the converting of Seventh street into a "Great White Way."—H. L. Hall, Secretary.

Rockaway, N. J.—Thomas H. Hoaglan is contemplating the installation of a power plant at White Meadow; water from the brook, after supplying the borough reservoir at Middletown, is to be used in generating electric current.

Somers Point, N. J.—Council has adopted the recommendation of Mayor John M. Campbell looking to the construction of an electric light plant; cost, \$15,000.

Williamstown, N. J.—Taxpayers are considering the erection of a water and an electric light plant.

Albany, N. Y.—The Oswego County Light & Power Company has petitioned the Public Service Commission for authority to increase its capital stock from \$100,000 to \$1,100,000 and for permission to issue \$1,100,000 of stock and bonds to the extent of \$2,500,000 for the acquisition of property and the construction of a plant and transmission lines; company proposed to develop power from the Salmon River and to construct a huge reservoir, which will make the water power plant one of the most valuable in Central New York; company's incorporation papers

specify the Counties of Oswego, Oneida, Onondaga, Cayuga, Seneca, Wayne, Monroe and Jefferson.

Buffalo, N. Y.—The Trustees will petition Council to issue \$37,500 bonds as the city's share of the expense of installing an electric lighting plant in the City and County Hall; total cost will be \$75,000.

Freeport, L. I., N. Y.—Citizens have voted \$15,000 for improvements and extensions to light plant.

New York, N. Y.—The Board of Estimate has appropriated \$102,000 for the installation of a lighting plant for the new public library.—J. L. Cadwalader and G. L. Rives, Trustees.

Niagara Falls, N. Y.—W. D'Arcy Ryan, Chief Illuminating Engineer of the General Electric Company, has prepared plans and details for the proposed illumination of the Falls.

Rockville Centre, L. I., N. Y.—Citizens have voted \$4,500 for improving and extending the light plant.

Canton, N. C.—G. N. Henson and D. J. Kerr are promoting construction of electric light plant.

Wadesboro, N. C.—Surveys are being made for A. H. Richardson, 500 North Pine street, Charlotte, N. C., with a view to developing water power property near Wharf town; canal half mile long will give a fall of 150 feet.

Wilmington, N. C.—The Tidewater Power Company is considering improvements, including enlarging and extending gas mains.

Mandan, N. D.—The Mandan Electric Company is considering the remodeling and enlarging of its plant; no definite plans have been made except the purchase of two boilers.—B. K. Skeels, Purchasing Agent.

Ashley, O.—City is considering the construction of a municipal electric light plant; cost, about \$10,000.—H. T. Westbrook, Councilman, is interested.

Bainbridge, O.—I. J. Miller, Fairview Heights, Cincinnati, O., is promoting the Paint Creek Power, Light and Heat Company, which proposes constructing hydro-electric plant at Bainbridge; cost, \$1,750,000.

Cincinnati, O.—L. P. Hazen & Co., 1610 Reading road, are considering construction of a combined power house and storage warehouse; cost, \$125,000.

Columbus, O.—Director Fisher, of the Public Service Board, will ask his associates to consider plans to eliminate overhead electrical wiring in the downtown sections of the city.

Dayton, O.—The Board of Education has decided to advertise for bids in view of the installation of an electric power and demonstrating plant at Stivers' Manual Training School; Board has passed a resolution naming R. L. Peterson Consulting Engineer in matters relative to the electrical equipment.

Hamilton, O.—The municipal electric plant will shortly extend its service to Warwickshire.

Toledo, O.—Council has decided to improve Jay, Milton and Oak streets by lighting.

Hydro, Okla.—Plans are being prepared by Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for lighting and water works plant; cost, \$25,000.

Lehigh, Okla.—Citizens have voted \$12,500 bonds for construction of electric light plant; O'Neil Engineering Company, Dallas, Tex., will have charge.

Minco, Okla.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., are preparing plans for a lighting and water works.

Okemah, Okla.—Citizens have voted \$55,000 bonds for electric light and water systems.

Oklahoma City, Okla.—The Weleetka Water Power Company has been incorporated by C. T. Blake, of Hobart; S. T. Ambler and H. McCaffin; capital, \$10,000.

Walter, Okla.—Citizens have voted to grant 20-year electric light franchise to O'Neal Electrical Company, Dallas, Tex.

Watonga, Okla.—City will purchase generator for electric and water plant.—J. C. Stanfield, Clerk.

Waurika, Okla.—Council has called a special election on granting a franchise to parties, who agree to develop this field for both oil and gas, with the understanding that in case they do not find oil or gas here they are to pipe the same from Petrolia, Tex.

Altoona, Pa.—The Edison Electric Illuminating Company will let the contract at once for extensive conduit work in various parts of the city.—E. B. Greene, Superintendent.

Altoona, Pa.—Council has passed resolutions for the installation of arc lights at Bell avenue and Seventh street, Twenty-second avenue and Fifteenth street and Seventeenth avenue and Fifteenth street.

Altoona, Pa.—A company of Pittsburgh capitalists is projecting a scheme to pipe natural gas from wells in West Virginia to Altoona; cost of the project would exceed

one million dollars; if Councils pass the ordinance promptly the promoters promise to have the gas in the city before the close of the year.

Bloomsburg, Pa.—The Columbia Power, Light and Railways Company will let contracts very soon for the building of a 25-mile, 23,000-volt, three-phase transmission line, with about 2,000-kw. of power transformers, lightning arresters, etc., and will install a 500-h.p. hydraulic turbine, a 300-kw. railway generator and a 200-kw. belted railway generator, with switchboard.

Philadelphia, Pa.—Urging that adequate lighting is needed along Girard, Columbia, Ridge and Susquehanna avenues and a short section of Twenty-ninth street, the business thoroughfares of the northwest section of the city, members of the Northwest Business Men's Association have started an agitation for more lights; matter has been placed in charge of the municipal committee of the association, of which Charles L. Fluck is Chairman.

Philadelphia, Pa.—City Comptroller Hooper has announced that the city has purchased lots 116, 118 and 120 South street as a site for the pumping station of the pipe line system of the Fire Department.

Tacony, Pa.—Residents have formed a gas company and selected a committee, consisting of John Minnick, Alfano Acuff and Richard Rylye, to confer with Mayor Reyburn with reference to securing a franchise to lay gas pipes.

Columbia, S. C.—W. M. Perry is promoting a plan to light Main street with a system of arches in which Tungsten light is used.

Spartanburg, S. C.—The Electric Power and Manufacturing Company will make improvements to its steam power plant, which will be used as an auxiliary plant; additional arc lamps will be installed.—F. H. Knox, Pittsburg, Pa., General Manager.

Jackson, Tenn.—Council has decided to add 14 lights to the present lighting plant.

Rockford, Tenn.—Benjamin Cunningham and Jas. L. Clark have purchased the plant of the Rockford Electric Company; plant will be reconstructed.

Rockwood, Tenn.—City is considering improvements to electric light plant.

Olney, Tex.—T. H. Kemp will construct electric light plant.

Alamo City, Tex.—A new power plant, to be modern in every respect, will be built by the San Antonio Gas and Electric Company within the near future.

Fort Worth, Tex.—E. R. Brown, representing the Clay County Oil Company, secured the right-of-way over the roads of the county for gas pipe lines from the Henrietta fields.

Galveston, Tex.—Commissioner Austin has been authorized to purchase from 10,000 to 15,000 electric light carbons at a cost of about \$260.

Wharton, Tex.—Council has granted a 50-year franchise to J. J. Wensley for an electric light plant.

St. Albans, Vt.—The Vermont Power and Manufacturing Company is considering the extension of its line to Cambridge Junction.—H. J. Foote, Manager.

Bellingham, Wash.—The power plant at Nooksack Falls, owned by the Stone & Webster Company, will be enlarged.—J. B. Lukes, District Superintendent.

Seattle, Wash.—Citizens are urging passage of the bill providing for a system of cluster lights on Broadway and Broadway North; Council is considering the proper lighting of Kinnear Park on Queen Ann Hill.

Seattle, Wash.—City has sold \$500,000 light extension bonds to the First Trust and Savings Bank, the Merchants' Loan and Trust Company and A. B. Leach & Co., of Chicago.

Spokane, Wash.—The Washington Water Power Company will build a 60,000-volt, high-tension power line from the sub-station at Twenty-ninth street to the new power station at Little Falls.

Tacoma, Wash.—City Comptroller John F. Meads is receiving bids for the \$300,000 bond issue authorized January 2 for the purpose of paying the preliminary expenses and securing the right-of-way and water rights of the municipal power plant on the Upper Nisqually; bids will be opened at 2 o'clock, April 5; bonds will be issued in the sum of \$500 each, 600 bonds being put out.

Chippewa Falls, Wis.—Messrs Irving Sears and Charles Dickinson are circulating a petition to secure a privilege for a dam at the Badger Mills water power site on the Chippewa River.

Monroe, Wis.—An improved water gas system will be installed by the Monroe Gas Company; the Schott Engineering Company, Chicago, will perfect plans and specifications for a water gas plant suitable to the needs of the company; company will also put in two or three more miles of mains; operations will begin as soon as practicable.

BIDDERS: aKewanee San. Supply Co., Kewanee, Ill, \$2,925.56. bLund & Cunyan,* Blackwell, Okla., \$15,483.79. cCollier & Clark Construction Co., Tonkawa, Okla., \$4,539.50. dFreeborn Eng. & Const. Co., Kansas City, Mo., \$19,058.37. eMathews Const. Co., Kansas City, Mo., \$15,568.68. fJoplin Electric Supply Co., Joplin, Mo., \$16,210.69.

Actopan, Hidalgo, Mex.—City has granted a concession to D. Andres Omana for the installation of a hydro-electric plant on the Actopan River to furnish electricity to light the town; power will also be used to operate a rice-cleaning plant.

BIDS RECEIVED AND CONTRACTS AWARDED

Indianapolis, Ind. — The Indianapolis Light and Heat Company has let a contract to the General Electric Company for the construction of an 8,000-horsepower turbine, which is to be placed at the company's Mill street station in Indianapolis; this turbine will be the largest in Indiana, and will be 27 feet high, with a circular base 16 feet in diameter; the new turbine will largely increase the company's current supply for power and lighting circuits.

West Toledo, O.—Contract for electric lights in West Toledo has been let to the Rail-Light at the rate of \$60 a year for five years, by the township trustees, in Clayton's Hall. Contract calls for 34 lights, to be installed within 60 days. The Rail-Light was the only bid presented, and it called for a 10-year contract. The opposition argued that the price was \$15 above that paid by Toledo, but the company held that the contract for 34 lights was a small one and that they could not be furnished at a lower rate.

Altoona, Pa.—The Edison Electric Illuminating Company has awarded a contract to the Bell-Bockel Stone Company for the construction of conduits and underground concrete work. This is one of a series of contracts which will be let by the Edison company for improvements, which will entail an expenditure approximating a quarter of a million dollars. The new conduits will contain 24 ducts, or apartments, and will be laid three feet underground. They will eliminate overhead wires, reducing the danger of firemen in fighting fires and preventing the usual damages caused by rain, wind and storm. The improvement will also enhance the appearance of the thoroughfares by dispensing with many unsightly poles, reducing the possibility of fires caused by the crossing of wires.

Wagner, S. D.—The Dakota Gas, Electric Light & Power Co., Wagner, S. Dak., has purchased from the Minneapolis Steel & Machinery Co., of Minneapolis, Minn., an 80-horsepower Muenzel producer gas engine and suction gas producer plant; outfit will be installed in the electric light plant at Wagner.

FIRE EQUIPMENT

Lowell, Ariz.—The Fire Department has been reorganized and equipment will be improved.—James Hanley, Chief.

Alameda, Cal.—City has appropriated \$8,000 for automobile apparatus.

Lincoln, Cal.—City has decided to double the present equipment of fire apparatus.

Palo Alto, Cal.—Citizens will vote on \$3,500 bonds for an automatic fire alarm system.

Quincy, Cal.—Council has passed an ordinance appropriating \$5,000 for a new steamer.

San Francisco, Cal.—City has nearly completed specifications for 15,000 feet of high-pressure hose for the fire boats.

Hartford, Conn.—The Board of Fire Commissioners, C. E. Parker, President, has recommended the purchase of arsenal site for a truck house.

Jacksonville, Fla.—Council has passed an ordinance authorizing the Board of Trustees to purchase a fire engine; cost, \$6,000.

Evansville, Ind.—The Board of Public Works, Walter F. Wunderlich, Clerk, will erect a \$10,000 hose house.

Indianapolis, Ind.—A deal for the purchase of a site for a fire engine house at New Jersey and South streets has been closed by the Board of Public Works.

Michigan City, Ind.—Plans have been prepared by Engineer H. M. Miles for the proposed central fire station to be erected

proposed central fire station to be erected upon the site of the present city jail and fire station, and work upon the same will begin this spring; structure will cost about \$20,000 and will front on Fourth street.

Vincennes, Ind.—The Board of Public Works has recommended the erection of two new engine houses: cost, \$15,000.

Wakeeney, Kan.—Citizens will vote on \$40,000 bonds for public improvements, including a fire department.

*Awarded Contract.

Baton Rouge, La.—City will purchase 500 feet of hose.—Chief Waddill.

Donaldsonville, La.—Town is planning to purchase a modern four-wheel hose reel.

Catonville, Md.—Wm. A. Ehlers desires catalogues and prices on fire-extinguishing apparatus.

Fall River, Mass.—Citizens of Maplewood are urging the erection of an engine house at Anthony street.

Hull, Mass.—Funds have been appropriated for the purchase of a fire engine.

Melrose, Mass.—Town is considering the building of two new fire stations.

Onset Bay, Mass.—The Fire Department will ask for a \$100 appropriation for new fire hose.

Winchendon, Mass.—Town has appropriated \$3,200 for its Fire Department and \$650 for new hose.

Detroit, Mich.—The Council Fire Protection Committee have allowed \$20,000 for the erection of a new fire house to replace the one occupied by Engine 5; \$68,560 for the erection of two ladder houses and \$27,790 for an engine house in the Eighteenth Ward; Council has also restored two items for engine houses amounting to \$90,085 which the Committee on Fire Department had cut from the estimate.

Virginia, Minn.—City has selected a site on the south side for a branch fire station.

Butte, Mont.—City is considering purchase of hose.

Bradshaw, Neb.—Town will erect an engine house.

Omaha, Neb.—Architects Misener & Stockham are preparing plans for a \$30,000 engine house.

Tilton, N. H.—Town has voted to install an automatic fire alarm system.

Harrison, N. J.—The Fire Committee will advertise for new bids for supplying members of the Fire Department with rubber coats.

Hoboken, N. J.—The Legislature is considering a bill giving Hoboken the right to build another fire house.

Ballston Spa, N. Y.—Citizens are urging the erection of a new station and the purchase of an auto chemical and hose wagon, a new truck, more alarm boxes, ladders and hose.

Clyde, N. Y.—Citizens have voted \$400 for the purchase of new hose.

Glens Falls, N. Y.—Town will purchase 1,500 feet of hose and three ladders.

Lockport, N. Y.—The Fire Board has asked Council to issue \$5,000 bonds for the purchase of an aerial truck and more fire hose.

Troy, N. Y.—Council has adopted a \$350,000 bond issue ordinance; money will be used in Fire Department and other public improvements.

Blue Hill, O.—Town will procure fire protection.

Dayton, O.—The National Board of Fire Underwriters has recommended that Fire Company No. 1 be equipped with a motor wagon for fire hose and chemical tanks and chemical extinguishers; that Nos. 11 and 14 be equipped with second size fire engines and that the fire alarm headquarters be moved to a fireproof building.

Kenmore, O.—Town is considering the establishment of a fire department.

Enid, Okla.—City has accepted plans and invites bids on erection of Fire Department building.—City Engineer Sexton.

Waurika, Okla.—Citizens have organized three fire companies, two hose and one chemical and ladder.

Ashley, Pa.—Citizens are urging the formation of another fire company.

Belleville, Pa.—City is considering need of relief valves and modern shut-off nozzles for its two steamers; also a deluge set and from 500 to 1,000 feet of 2½-inch cotton, rubber-lined hose.—John J. Brown, Chief.

Boyetown, Pa.—Over \$1,200 has been subscribed toward a \$1,600 chemical engine for the Friendship Hook and Ladder Company.

Butler, Pa.—Business men are urging the installation of an automobile hose wagon.

Donora, Pa.—W. S. Spragg, Burgess, has recommended the erection of a joint fire and borough building.

Harrisburg, Pa.—Council has authorized the purchase of five fire alarm boxes.

Scranton, Pa.—Council is again considering the erection of six fire houses, for which an ordinance permitting \$36,000 bond issue was passed July 3, 1908.

Silverly, Pa.—The Fire Commissioners have recommended the securing of 500 feet of hose, two axes, two lanterns, 32-foot extension ladders, two respirators and 2½ dozen badges.

Wilkes-Barre, Pa.—Architect Henry Maier has completed plans for the proposed new engine house for East End.

Valley Falls, R. I.—The Valley Falls Business Men's Association is considering the introduction of an automobile truck as an improvement in the fire apparatus.

Johnston, S. C.—City is considering need of better fire protection.

Midland, S. D.—A Volunteer Fire Department has been organized.—Frank Calhoun, Chief.

Watertown, S. D.—Town will purchase a combination chemical engine and hose wagon.

Memphis, Tenn.—Fire Chief Sullivan has asked for \$388,050 to carry on his department this year; the erection of five new fire halls, the purchase of engines and an auto for himself are included in the budget.

Rockwood, Tenn.—City is considering improvements to Fire Department.

Galveston, Tex.—The purchase of 800 feet of 2½-inch hose, with coupling, for \$720, has been authorized.

Texarkana, Tex.—City will receive bids March 31 for \$2,500 fire house bonds.

Norfolk, Va.—The Berkley Ward Improvement Committee is considering erection of fire and police station.

Norfolk, Va.—The Board of Control has reconsidered the repair of the York street fire house.

Milton, Vt.—Town will purchase a chemical engine.

Chehalis, Wash.—Council has decided to obtain other quarters for the City Hall, as the present city building is to be soon remodeled to accommodate the new fire apparatus recently purchased.

Toronto, Ont., Can.—Ratepayers will vote May 8 on a measure to provide money for new fire halls.

BIDS RECEIVED AND CONTRACTS AWARDED

Bisbee, Ariz.—Contract for 2,000 tons of cast-iron pipe and specials for fire protective system has been awarded to the United States Pipe Co.—George S. Gage, City Clerk.

San Francisco, Cal.—Contract No. 1, for the construction of two fire boats, the "David Scannell" and the "Dennis T. Sullivan," has been awarded to the Risdon Iron and Locomotive Works.

New Haven, Conn.—Bids were received, Mar. 16, by the Board of Fire Commissioners for fire hose; contract has been awarded to the C. C. C. Fire Hose Co., Canton Junction, Mass., for 64 cents per foot. Other bidders were: Eureka Fire Hose Co., Boston, Mass., 67 1-2 cents; Diamond Fire Hose Co., 1876 Broadway, New York, 79 cents; Fabric Fire Hose Co., New York, 64 3-4 cents, and Voorhees Rubber Co., 75 cents.

Eight hydrants at \$29.25 per hydrant are also to be purchased from the Pratt & Cady Company.

Paterson, N. J.—Three hundred feet of 1-inch hose for chemical engine service have been purchased at 40 cents a foot from the Voorhees Rubber Manufacturing Company; a dozen or more bids were received but the one decided upon seemed to be the most advantageous.

Cuyahoga Falls, O.—The Village Council has purchased a new combination, chemical engine and hose cart from the American La France Fire Engine Co., of New York; the contract price was \$1,525; there was but one bidder.

Park City, Tenn.—The combination fire fighting wagon has been ordered by Capt. T. S. Dooley, Chairman of the Fire and Police of Council, and the apparatus will be in service within 90 days. The wagon is modern in every respect, and is provided with one forty-gallon chemical tank, 200 feet of chemical hose and 1,000 feet of straight fire hose; the purchase price will come within the appropriation of \$1,600.

ELECTRIC RAILWAYS

Eufaula, Ala.—A committee of prominent citizens of Dothan are conferring with business men of Eufaula in the interest of the proposed electric road to connect Eufaula, Abbeville and Dothan.

San Francisco, Cal.—Citizens of Bernal Heights have accepted the offer of the United Railroads to build a car line from Mission to Folsom streets; cost, \$28,000.

San Francisco, Cal.—The draft of the Stockton street car line franchise has been practically agreed upon by the Public Utilities Committee and it will be presented to the Board of Supervisors, with a request that a resolution be adopted offering it for sale to the highest bidder.

Denver, Col.—The Denver & Fort Collins Interurban Railway has been incorporated to build an electric railway from Denver via Lafayette, Erie, Longmont and Berthoud to Fort Collins, also to Colorado Springs, Greeley, Golden and Morrison.—John Olson, Leslie De Remer, Fred. O. Olson, Ralph Dougherty, R. E. Inskeep, Demerit E. Brown and Abner Graves, Incorporators.

Washington, D. C.—A report has been received from an American Consul in Latin America, in which he states that the local government will shortly grant a franchise for the construction of an electric car line

for both the municipality and the suburbs. The consul states that those interested in securing the concession should get to work at once, as competitors are already at work endeavoring to secure the same. Copy of the report, containing full particulars and details, can be obtained by interested contractors from the Bureau of Manufactures.—No. 3,226.

Key West, Fla.—The Key West Electric Company will build an extension to its lines.

Atlanta, Ga.—The Middle Georgia Interurban Railway has been granted a charter to build an electric railway between Griffin and Social Circle, with branches to Flovilla and Monticello; length, 70 miles; capital stock, \$200,000.—Charles F. Howe, Milledgeville; L. W. Roberts, Atlanta, and W. F. Smith, Flovilla, Incorporators.

Cairo Ill.—The Cairo Electric and Traction Company will petition Council for permission to operate a single track street railway.

Champaign, Ill.—In order to connect the Illinois traction system with the Indiana line of interurbans, the officials of the McKinley syndicate have laid plans to construct a branch from Ridgefarm to Paris; at Paris the line would connect with an Indiana system.

East St. Louis, Ill.—Construction contracts will be let in about 60 days by the East St. Louis, Columbia & Waterloo Railway Company; right-of-way is partly secured for road, which is to be built from East St. Louis through Duplo, Bixby, East Carondelet, Columbia and Waterloo, Ill.—E. F. Schoening, President, Columbia, Ill.; Baxter L. Brown, 610 Laclede Bldg., St. Louis, Mo., Chief Engineer.

Chicago, Ill.—Council will reconsider ordinance granting the Kensington & Eastern Railroad Company a 20-year franchise, which was defeated a few weeks ago; company proposes to construct an electric railway, eight miles in length, between the Illinois Central Railroad at Pullman and the Chicago, Lake Shore & South Bend Railway at Hammond, Ind.

Elgin, Ill.—The Waukegan, Rockford & Elgin Traction Company, R. D. Wynn, General Manager, will begin actual work of construction with the opening of spring, about April 15; simultaneously the work of construction will begin at Waukegan and at Grays Lake.

Fort Wayne, Ind.—The Fort Wayne & Toledo Traction Company is projecting a trolley line from Bryan, O., to Fort Wayne, via Hicksville and Harlan.—R. L. Bastress, Promoter.

Hammond, Ind.—Applications for franchises for a new interurban railroad connecting Hammond, East Chicago, Indiana Harbor, Gary and Crown Point will be made before the Councils of Hammond and East Chicago by the Calumet Traction Company; company has just been incorporated at Indianapolis for \$100,000 capital stock; W. C. Ijams, of Terre Haute, is President and E. L. Keating, of Boston, is Vice-president; Patrick Harahan and Edward Bailey, of Chicago, are Directors; if the franchises are granted the line will begin at once; C. W. Hotchkiss, prominent as an official of the Chicago, Indiana & Southern Railroad, is connected with the new company.

South Bend, Ind.—The Portage avenue street car line will soon be extended north to Riverview Cemetery, providing the management of the Chicago, South Bend & Northern Indiana Railway Company acts favorably upon a petition now in circulation requesting the extension of the line to that point.

Waukegan, Ind.—Contracts for the building of the first five miles of the Waukegan, Rockford & Elgin Traction Company will be let in April; railway will run from Waukegan west to Rockford and southwest to Elgin, distance 76 miles.—John D. Pope, President; Harry J. Fermer, Chief Engineer, Waukegan; R. D. Wynn, General Manager.

Davenport, Ia.—The People's Railway, Light and Power Company will improve tracks; about \$250,000 will be expended.

Sioux City, Ia.—Preliminary steps for the opening of an interurban railway line between Sioux City and Hartington, Neb., have been taken by Sioux City and Nebraska business men.—C. T. Johnson, Peter Askin and Ben McClary, of Martinsburg, and Messrs. Burgel, Lynde and Morton, of Hartington, and James F. Toy, C. F. Lytle, George C. Call, R. J. Andrews, J. A. Blondell, J. A. Dean, C. A. Kneeder, J. M. Lynch and J. N. Wood, of Sioux City, Promoters.

Turner, Kan.—Citizens have formed a stock company to construct an electric car line from Turner to Argentine; length, 1½ miles.—F. L. Strickland, Secretary.

Manchester, Ky.—The Cumberland Railroad Company has been formed to construct a railroad from Artemus, Knox County, through the counties of Knox, Clay, Owsley and Lee to Beattyville; capital, \$100,000.

Paducah, Ky.—Finances have been secured by the Directors of the Paducah Southern Electrical Company, which proposes to build an interurban from this city to Mayfield; ultimately the company will extend the line to Union City, Tenn.—H. H. Loving, President.

Somerset, Ky.—Several thousand dollars will be expended on extending the street car line to the big railroad shops at Ferguson, a suburb of Somerset, and work on the extension will begin at once and will be pushed with all possible haste to a finish.

Algiers, La.—The Algiers Railway and Lighting Company will extend its street car line up to the Texas Pacific depot in Gretna.—Leigh Carroll, President.

New Orleans, La.—The New Orleans & Seashore Railway has been organized and incorporated to carry out the plans of the New Orleans & Seashore Air Line Railway; construction will soon begin on electric railway from Amesville, opposite New Orleans, to Grand Isle, La.; distance, 55 miles; capital stock, \$2,000,000.—James W. Porch, J. H. Menge, Jr., D. W. Benson, Leo A. Marrero and Lamar C. Quintero, all of New Orleans, Incorporators.

Burkittsville, Md.—Citizens are interested in a plan to build an electric railway from Brunswick via Horsey's Distillery and Burkittsville to Middletown, Md.; distance, 15 miles.—Thomas Hightman, Chairman of Citizens Committee.

Haverhill, Mass.—The New Hampshire Electric Railways has purchased the H. M. & A. Street Railway; new owners will rebuild and improve road.

Marquette, Mich.—An electric railway connecting the cities of Ironwood and Bessemer, Gogebic iron range, has become assured; right-of-way privileges across the lands of the United States Steel Corporation and Corigan, McKinney & Co. have been granted to the Twin City Electric Company, and the concern has given bond that the road will be completed within one year.

St. Louis, Mo.—The United Railways has applied to the Board of Public Improvements for permits to reconstruct a large portion of track on several of the lines.

Florence, Neb.—Articles of incorporation for the new Florence-Blair interurban have been filed; L. M. Allen, L. C. Nebergall, Don C. Gould, J. F. Munro and T. J. McVittie are the incorporators; company, which will be known as the Western Shore Electric Railway Company, will be capitalized at \$150,000; southern terminus of the road will be in the city of Florence and will extend through the county of Douglas and the county of Washington to the city of Blair, its northern terminus.

Hastings, Neb.—The bridge on Elm avenue in Hartwell Park is to be repaired by joint action of the City Council and County Board of Supervisors.

Plattsmouth, Neb.—The Plattsmouth & Southwestern Interurban Railway has been incorporated to build and operate an electric railway from Plattsmouth to Minley and Murdock; capital stock, \$100,000.—Charles C. Parmalee, R. B. Windham, H. D. Travis, J. P. Falter and W. W. Curtis, Incorporators.

Montclair, N. J.—Residents of Upper Montclair are urging the establishment of a through trolley service between Newark and Montclair Heights.

West Orange, N. J.—The Mountain Traction Company has presented a draft of an ordinance to the Council which, if passed, will give the independent trolley company a terminus at the entrance of the South Mountain Reservation; extension proposed is from the present terminus at Cable Road avenue and Northfield avenue, along Northfield avenue, a distance of 900 feet, to Walker road.

Brooklyn, N. Y.—Contracts will be let about April 15 for the construction of the South Flatbush Street Railroad Company's proposed line, which will run from the Brighton Beach line to the Brooklyn Union Elevated Railroad Company at Avenue Q to Avenue Q and Flatbush avenue. Borough of Brooklyn.—J. C. Langan, 178 Remsen street, Brooklyn, President; Geo. H. Gifford, Chief Engineer.

Rensselaer, N. Y.—The Board of Aldermen has ordered the railroad companies to prepare new plans for the bridge on Columbia turnpike.

Rochester, N. Y.—D. C. Salyerds, of Scottsville, principal promoter of the new trolley line, is conferring with General Superintendent W. R. W. Griffin, of the Rochester Railway Company; plans have already been drawn up and work of construction will begin some time this year; line will run from this city to Batavia, then southward to Mumford, Leroy, Scottsville, Silver Lake, Portage Park, and a number of other towns and villages that have no trolley connections with Rochester.

Syracuse, N. Y.—Captain Wm. B. Rockwell, General Manager of the Syracuse & Suburban Electric Railway, has announced

that within the next few weeks about \$40,000 will be spent on improvements to roadbed and the purchasing of new cars for the road.

Raleigh, N. C.—The Yadkin River Railway has been organized to build a railway from East Bend to Donnah. —W. A. Martin, Promoter.

Akron, O.—Construction on a new interurban traction line between Cleveland and Zanesville, O., opening up a new territory with this city as the main terminus, will begin within 60 days; the Cleveland, Brooklyn & Elyria Railway Company has secured rights-of-way between Cleveland and Zanesville; new line will embrace the following Ohio municipalities: Parma, Strongsville, Elyria, North Royalton, West Richfield, Ghent, Montrose, Copley, Royal Oak, Barberton, Doylestown, Orrville, Millersburg, Coshocton and Zanesville, with a branch to Cambridge; name of the present company will be changed to Cleveland, Barberton, Coshocton & Zanesville Railway Company.—J. Harry Kinsely, Jr., Secretary.

Cleveland, O.—Construction on a new interurban traction line between Cleveland and Zanesville, O., opening up a new territory with this city as the main terminus, will begin within 90 days. The Cleveland, Brooklyn & Elyria Railway Company has secured rights-of-way; new line will embrace the following Ohio municipalities: Parma, Strongsville, Elyria, North Royalton, West Richfield, Ghent, Montrose, Copley, Royal Oak, Barberton, Doylestown, Orrville, Millersburg, Coshocton and Zanesville, with a branch to Cambridge; name of the present company will be changed to Cleveland, Barberton, Coshocton & Zanesville Railway Company.—J. H. Knisely, Secretary.

Bartlesville, Okla.—W. V. Thraves, a Nowata lawyer, has succeeded in securing capital for the building of an interurban electric line from this city to Nowata; line will be 21 miles in length; work will be begun immediately.

Eugene, Ore.—The Lane County Asset Company, recently organized at Eugene, to build an electric railway over the county roads from Eugene to Florence, has started surveys; franchise has been granted George M. Miller, J. W. Zimmerman, Charles H. Fisher and Fred Fisk, all of Eugene, Promoters.

Bustleton, Pa.—The Bustleton & Byberry Street Railway Company has been organized and will operate cars between the upper end of Frankford to Byberry and Bustleton.

Chambersburg, Pa.—The Chambersburg, Greencastle & Waynesboro Electric Railway Company will start soon to extend both ways, by building a branch northward to the Red Bridge, where a fine park will be made, and another line over the mountain from Pen Mar through the summer resort region to Blue Ridge Summit; distance, three miles; construction committees have been appointed to arrange for and supervise these extensions and an early start will be made on both; Directors have also decided to take up the franchise, granted by Council, and begin building the extension toward Shippensburg as soon as possible.

Lebanon, Pa.—Capitalists at Ephrata and at Lancaster are considering the construction of a through street railway line from Ephrata, which has already trolley connections with a number of towns, to this city.

Lebanon, Pa.—A street railway line to Jonestown, from this city, is the next prospective trolley venture; proposed line may also take in Fredericksburg, which has no railway connections at all at present.

New Wilmington, Pa.—Ten surveyors in charge of Chief Engineer A. G. Shaw have begun surveying a route for the proposed trolley line between this town and Conneaut Lake; about 12 miles between New Wilmington and Big Bend is the only section of the route that has not been surveyed.

Philadelphia, Pa.—Trolley connection with the large territory comprising the lower fringe of Olney, around Wyoming avenue and Front street, which would benefit trade conditions in Kensington, has been promised to the Kensington Business Men's Association as soon as Front street from Erie avenue to Wyoming avenue is opened.

Pittsburg, Pa.—The Pittsburg Railways Company is considering a plan for the construction of an elevated spur along Liberty avenue from Fourteenth street to Thirty-sixth street.

South Bethlehem, Pa.—Work will be started shortly on the completion of the South Bethlehem and Saucon trolley line, between Colesville and Centre Valley; new line, via Lehigh Valley transit connections, will cut off 15 miles of the distance between Philadelphia and Delaware Water Gap.

Johnson City, Tenn.—The Austin Springs Railway Company has been organized to build a railway between Johnson City and

Austin Springs; distance, about five miles; contracts have been placed for the rails.—J. B. Cox, Johnson City, is interested.

Glen Rose, Tex.—J. H. Farr is promoting the construction of an interurban from Godley to Glen Rose and Fort Worth.

Rockport, Tex.—The Rockport & Aransas Pass Railroad Company has been chartered to construct an electric railway from Rockport to the jetties at Aransas Pass; distance, 11½ miles; capital stock, \$11,500.—C. G. Johnson, Harry Traylor, D. R. Scrivener and W. H. Baldwin, of Austin, Tex., Incorporators.

Sherman, Tex.—Construction contracts will be let about April 1 for building the line of the Gainesville, Whitesboro & Sherman Electric Railway; line will be operated by gasoline or electric power.—J. P. Hornaday & Co., 30 Church street, New York.

Vancouver, Wash.—Property owners at Orchards have appointed a Committee to take steps looking to the subscription of a \$10,000 bonus for the extension of the Vancouver street car system to Orchards, a distance of five miles.

Walla Walla, Wash.—The Columbia & Walla Walla Traction Company is considering an extension to Spokane; surveys are being made.—J. H. Morrow, of this city, Promoter.

Walla Walla, Wash.—The Walla Walla Valley Traction Company is considering the extension of their lines.—I. W. Anderson, President.

London, Ont., Can.—Surveys of the North Midland Railway have been completed; construction will begin this spring; line will connect Lucan, Granton, St. Marys Stratford and London, Ont.; distance, about 45 miles; capital stock, \$1,000,000.—W. Scarlett, 169 Dundas street, London, Ont., President; T. H. Lascombe, London, Secretary; A. E. Welch, London, General Manager.

Toronto, Ont., Can.—The Eastern Ontario County Electric Belt Line Company has petitioned the Provincial Government for incorporation; capital, \$1,000,000; company proposes to build an electric railway from Lancaster township, along the St. Lawrence to Cornwall, Brockville, Dundas, Lanark and passing through Athens, Perth and connecting with the Lanark Counties Electric Railway.—C. S. Cossett, Brockville, President.

Hamburg, Germany.—H. Zornow, Hochallee 115, Hamburg 37, Germany, desires catalogues, prices and discounts on railway equipment, rolling-stock and supplies.

BRIDGES

Fort Smith, Ark.—Senator Holland has introduced a bill providing for the formation of a special district, including Sebastian and Crawford counties, to erect a free bridge over the Arkansas, midway between Van Buren and Fort Smith.

Waldron, Ark.—Plans are being prepared for the construction of two bridges in Scott County, one across Poteau, the other across Fourche River.

Pasadena, Cal.—Deputy City Engineer Gibson has recommended the construction of two concrete culverts to be built across Woodbury road.

Tehama, Cal.—Citizens are urging the erection of a new free bridge across the Sacramento River at this point.—John Simpson, Temporary President Citizens' Association.

Manchester, Conn.—E. E. Hillard is negotiating with the Connecticut Company for the construction of a culvert bridge to span the Bigelow Brook about 150 feet east of the railroad tracks or in the Center Spring woods; Surveyor Olmstead, of East Hartford, has drawn plans for the bridge and Contractor Patrick Gorman has been asked to make an estimate of the cost.

Geneva, Ill.—Bids received for the construction of a bridge at the Fox River crossing of State street have been rejected; changes will be made to the Troxel plans and bids readvertised at once.

Venice, Ill.—The St. Louis Electric Bridge Company, St. Louis, Mo., is considering the construction of a bridge over the Mississippi River from Venice to St. Louis.

Indianapolis, Ind.—The Board of Public Works has rejected all bids for the construction of a new concrete bridge across Pleasant Run in Emerson avenue; Volpp & Fritz, with a bid of \$3,589, were the lowest bidders; bidders forgot to sign bid.

Richmond, Ind.—The County Commissioners will construct a steel or reinforced concrete bridge, approximately 600 feet to 800 feet long; Engineer not yet selected.—C. E. Wiley, Commissioner.

Council Bluffs, Ia.—Plans are being prepared by City Engineer S. L. Entyre for a reinforced concrete bridge at Eighth street.—A. W. Casady, City Clerk.

Glasgow, Ky.—Barren County will construct a new bridge.

Newburyport, Mass.—The Board of Commissioners of Essex County has filed plans

with the State Harbor and Land Commission for the iron and steel bridge to supersede the famous chain bridge.—Moody Kimball, Chairman, Salem.

Saginaw, Mich.—The Board of County Supervisors is considering the erection of a bridge at State street; cost, \$23,000.

Duluth, Minn.—Council is considering the repair of the Sixth avenue west viaduct; cost, \$1,000.—City Engineer McGilvray.

St. Paul, Minn.—The House has passed the bill authorizing St. Paul and Minneapolis to issue \$150,000 bonds for erection of the Summit avenue bridge.

Marysville, Mo.—Nodaway County Commissioners will erect a number of bridges; cost, \$15,000.—Geo. D. Mott, County Clerk.

St. Joseph, Mo.—The Buchanan County Board of Commissioners is considering the construction of a 100-ft-span reinforced concrete bridge over No. 102 River; also a number of concrete culverts.—S. P. Smith, County Clerk; L. M. Stallard, County Engineer.

University City, Mo.—Citizens will vote on \$30,000 bridge bond issue.

Omaha, Neb.—The City Engineer has submitted plans for a viaduct 312 feet long with a footwalk 7½ feet wide over the Great Western Railroad tracks at Eighteenth and Mason streets.

Omaha, Neb.—Council has referred back to City Engineer Andrew Rosewater his plans for the construction of the Locust street viaduct with the recommendation that he confer with the Board of Park Commissioners; Engineer also sent to the Council plans for the proposed Dodge street viaduct, between Fortieth and Forty-sixth streets; estimated cost, about \$56,000.

Long Branch, N. J.—The Board of Trade will ask the County Board of Chosen Freeholders to place a draw in the Atlantic avenue bridge.

Newark, N. J.—The Joint Bridge Committee of the Boards of Freeholders of Essex and Hudson Counties has passed a resolution in favor of erecting another span across the Passaic River; Town Clerk of Kearny will call a public meeting to learn what location is favored for the proposed new bridge.

Wharton, N. J.—Mayor Oram has recommended the construction of a new bridge over the canal; cost about \$8,000.

Buffalo, N. Y.—The Board of Aldermen has allowed \$50,000 for the reconstruction of the viaduct at Seneca and Smith streets; \$15,000 for viaduct over the Central, and \$15,000 for the Main street viaduct.

Buffalo, N. Y.—Property owners on Bailey avenue and William street are urging the erection of a viaduct in order to eliminate the Erie grade crossing; cost, \$1,000,000; a subway is being planned.—A. F. Scheu, Chairman of the Grade Crossing Commission.

Lockport, N. Y.—City Attorney A. Edmund Lee has been directed by Council to prepare a bill for presentation to the Legislature for the issuance of \$1,500 bonds for the erection of a new bridge over the 18 Mile Creek at Clinton street.

Utica, N. Y.—State Engineer and Surveyor Frank M. Williams has made a favorable report to the Senate Finance Committee on Senator Donaldson's bill providing for the construction of a lift bridge over the Erie Canal at Seneca street in this city.

West Seneca, N. Y.—The Town Board has received a petition asking that a special election be held to vote on the two bridges at a cost of \$26,000; Bridge No. 1 would span Cazenovia Creek, leading into Supervisor Henry Lein's park; estimated cost, \$20,000; Bridge No. 2 would be known as the Kirby avenue bridge; cost, \$6,000.

Wilmington, N. C.—The Atlanta Coast Line will replace 5¼ miles of wooden trestle with concrete piers and steel girders across the Pee-Dee River, near Florence, S. C.; over the Santee River, between Lanes and Charleston, and over the Savannah River, between Hardeeville, S. C., and Savannah.

Akron, O.—County Commissioners will expend \$50,000 for bridges, culverts and repairs.

Youngstown, O.—Bids will be received in April for the construction of the Spring Common bridge in connection with the elimination of grade crossings; estimated cost, \$176,000.—F. M. Lillie, City Engineer.

Portland, Ore.—The Portland Railway, Light and Power Company is considering the building of a bridge across the Willamette River; cost about \$300,000; site has not yet been selected.

Bethlehem, Pa.—Council is considering the erection of a new bridge across the Lehigh canal the same width as Main street bridge.—Chief Burgess Martin.

Breslau, Pa.—The Board of Viewers that heard testimony for and against the proposition to construct a new free bridge across the river between Plymouth and Breslau, will report favorably and urge the early erection of the new structure.

Harrisburg, Pa.—Mayor Meals has signed an ordinance authorizing the construction of a bridge over the tracks of the P. & R. Railroad at Seventeenth street.

Keelersburg, Pa.—The Business Men's Association of Falls and Keelersburg will ask the Legislature for a \$75,000 appropriation for a bridge over the Susquehanna River.

Philadelphia, Pa.—Councils have passed an ordinance for the construction of a bridge on Roberts avenue under the Philadelphia, Germantown & Chestnut Hill branch of the Pennsylvania Railroad.—John E. Reyburn, Mayor.

Reading, Pa.—Berks County Commissioners, after viewing a bridge across the Iron Stone Creek, in Colebrookdale township have recommended a new structure.

Royersford, Pa.—Council has asked the County Commissioners to construct a wagon bridge at the lower end of Royers and Spring City boroughs.

Slatington, Pa.—Commissioners of Lehigh and Northampton Counties have decided to have plans prepared for repairs to and the rebuilding of the bridge across the Leigh, between Slatington and Walnutport; cost, \$15,000.—County Engineer Rathbone, of Allentown.

York, Pa.—Council has passed first reading a bill authorizing the construction of a reinforced concrete bridge over the Poor House run at Boundary avenue and Prospect street.

Providence, R. I.—Contract will soon be let for the steel bridge to be erected over West River at Branch avenue, near the Wauskuck Mills; estimated cost, \$8,000.

Cleburne, Tex.—Johnson County Court Commissioners are considering the construction of a steel bridge over the Brazos River near Freeland.

Hillsboro, Tex.—The Commissioners' Courts of Hill and Bosque counties will erect an \$18,000 steel bridge over the Brazos River between these counties and will be an air line between Hillsboro and Meridian, the county seats; of the \$18,000 Hill county is to pay \$9,000, Bosque County \$6,000 and \$3,000 will be raised by private subscription by the people of Whitney.

Hondo, Tex.—Medina County citizens will vote April 6 on \$40,000 bridge and road bond issue.

Terrell, Tex.—Arrangements are being considered for construction of concrete bridge across Brushy Creek, under supervision of Commissioner H. A. Hart.

Tacoma, Wash.—The Streets and Alleys Committee of Council has voted to recommend the adoption of a resolution appropriating \$1,500 for the purpose of paying half of the cost of a bridge in District No. 636.

Waterville, Wash.—County Commissioners are considering the construction of a new bridge over Crab Creek in Krupp.

Madison, Wis.—G. B. Ferry, of Milwaukee, has prepared plans for four new bridges to be constructed in Tenny Park.

South Kaukauna, Wis.—The Wisconsin Bridge and Iron Company, Milwaukee, has prepared plans for a 128-foot steel bridge across the right-of-way of the Green Bay & Mississippi Canal Company.

Edmonton, Alta., Can.—Council and the Canadian Pacific Railway Company have plans for the joint railroad and traffic bridge; cost, \$300,000.

Edmonton, Alta., Can.—The Public Works Department has selected sites for the proposed high level bridges; estimated cost, \$278,000 to \$513,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Indianapolis, Ind.—Because the lowest bidders, Volpp & Fritz, failed to sign their bid, the Board of Public Works rejected all bids for the construction of a new concrete bridge across Pleasant run in Emerson avenue. The company's bid was \$3,589, while the next lowest, submitted by Kurt & Park, was for \$3,736.

Bids were also received for a concrete bridge, faced with stone, across the canal in West Thirtieth street. The lowest bidder was R. F. Pickens, whose bid was \$9,376. The highest bid for the bridge was \$16,985. No money is available for the two bridges, although an ordinance appropriating \$20,000 for their construction is pending before Council.

Hutchinson, Kan.—Howard & Son, city, have been awarded the contract of putting a cover over Cow Creek, from the alley east of Main street to the alley between Washington and Adams streets on A avenue; the work will be done in brick at a cost of \$6,167.20 to the city. Three bids were received: The Topeka Bridge & Iron Company agreed to construct two 100-foot archways of cement construction, and also filed plans for a single 20-foot archway, constructed of cement for \$6,180. The A. M. Blodgett Construction Company, of Kansas City, agreed to furnish the labor and material for the bridge, on cement construction for \$6,700.

The bid of Howard & Son was the only one received for brick construction; the company's bid on cement construction, to furnish labor and material, was \$6,567.20.

Weaverville, N. C.—The Nashville Bridge Co., Nashville, Tenn., has been awarded contract for furnishing all iron bridges for line of Weaverville Electric Co. to Weaverville.

Franklin, Pa.—Council has awarded contract for the construction of the Fifteenth street culvert, of which bids were received last Friday, to John E. Ritchey, for \$949.50; Theobalt & Thomas bid \$950 and Amsler & Shaffer \$953.50.

Pottsville, Pa.—The contract for erecting a steel bridge over the Schuylkill River, near Pottsville, has been awarded to the Nelson-Merydith Company, of Chambersburg, Pa., they being the lowest bidders; the bridge must be completed by May 25. Following are the bids received: Eastern Steel Company, \$6,878; Penna Bridge Company, \$6,495; Canton Bridge Company, \$6,700; A. Buchanan Company, \$7,564; York Bridge Company, \$5,955; Nelson-Merydith Company, \$5,497; L. F. Shoemaker Company, \$6,790; United Construction Company, \$6,900.—C. T. Straughn, County Controller.

Camden, S. C.—The Penn Bridge Co., New Brighton, Pa., has been awarded contract for 375-foot bridge consisting of one 130-foot span, two concrete abutments and one concrete pier, for \$38,089.—M. C. West, County Supervisor.

Brownsville, Tex.—The St. Louis, Brownsville & Mexico Railroad Co. has awarded contract for substructure of international bridge across the Rio Grande River here to the Foundation Co., 115 Broadway, New York, and for superstructure to Wisconsin Bridge & Iron Co., North Milwaukee, Wis.; bridge will be about 500 feet long.—R. C. Burgess, Resident Engineer, Knoxville, Tenn.

Beloit, Wis.—The Board of Public Works has accepted the bid of C. C. Shafer, of South Bend, Ind., for reblocking the Central bridge. It follows: Lumber as per specifications for blocks, \$27; other bids received were: Meagher & Cook—For 3-inch sound, white oak bridge planking, 6 inches wide, cut into blocks, \$38.50 per thousand; same as above, not cut into blocks, \$30.50 per thousand; for labor, according to specifications, including the cutting into blocks, \$989.75. C. C. Keeler Lumber Company—No. 1, common white oak plank, \$29 per thousand. Havden & Westcott Lumber Company, Chicago—50,000 common bridge plank, \$27 per thousand; 50,000 selected bridge plank, \$30 per thousand; all bids are f. o. b. Beloit.

Superior, Wis.—The Northwestern Fuel Co. has let a contract for the construction of a 450-foot loading and unloading bridge at its dock, No. 2, in this city to the Myl-Peterson Co., of Pittsburgh.

Toronto, Ont., Can.—The County of York has awarded contract for a 200-foot single span bridge superstructure over the Humber River, north of Lambton Mills, to the Ontario Bridge Co., of Toronto, at \$9,404.

Manila, P. I.—The contract for constructing the Moriones concrete bridge in Tonaos has been awarded to the Atlantic, Gulf & Pacific Co., Monadnock Bldg., San Francisco, Cal.

STREET CLEANING AND REFUSE DISPOSAL

Palo Alto, Cal.—Citizens will vote on \$16,000 bonds for a garbage incinerator and \$10,000 bonds for a condensing plant.

Eveleth, Minn.—The City Clerk has been instructed to advertise for bids for two steel tanks for hauling garbage; tanks will contain about four cubic yards; Council expects the tanks and wagons to cost about \$500.

Rochester, N. Y.—Bids will soon be called for street sweeping and cleaning.

Miamisburg, O.—Council has appointed a Committee to visit Dayton to investigate the flushing machines in that city.

Rocky River, O.—City has decided to spend \$25,000 for the construction of a reduction plant.

BIDS RECEIVED AND CONTRACTS AWARDED

Marysville, Cal.—Council opened bids on the street sweeping and street sprinkling contracts, Mar. 15; for the first-named work there was only one bid, that of Edward Striker at \$145 per month, he to do the sprinkling preceding the sweeping; this is \$30 per month more than Striker has been receiving for the same work.

On street sprinkling, with the district the same as last season, William Nutley bid 18 cents per block on streets for first sprinkling, 7 cents per block for second sprinkling, and 6 cents per block for alleys. The bid of Gengler & Arnoldy was the

same as Nutley, with the exception that it is 1 cent less on the first sprinkling of streets per block. The latter firm agreed to furnish three four-horse teams to cover seventy-five blocks per day at \$6 per day per team and driver, provided the Council preferred that sort of contract. All the bids were taken under consideration.

C. C. Breedan, the negro who had the street sprinkling contract last year, did not bid on the work this time.

Evansville, Ind.—Bids for street sprinkling in 1909, opened, Mar. 19, by the Board of Public Works were so much higher than last year's contract price of \$21.45 for each 10,000 square feet of sprinkled surface that the Board postponed, temporarily final action. The low bid was Louis P. Elgenmann's, at \$26.40; August P. Elgenmann bid \$26.65, and W. H. Grammer, last year's contractor, bid \$32. The bids will probably be rejected and new ones asked. The possibility that the city undertake sprinkling on its own account has occurred to the Board and the Mayor, and the city may go into the sprinkling business itself. The street sprinkling season is from April 1 to Nov. 1.

Louisville, Ky.—The Peter & Burghard Company, of Louisville, was awarded the contract for supplying the marble wainscoting to be used in the stairways of the City Hall Annex; the price was \$4,568, the next lowest bidder being a Pittsburg firm, which asked \$6,415 for the work.

Boston, Mass.—Guy C. Emerson, Superintendent of Streets, awarded contracts as follows for street cleaning and street watering: For the Dorchester district to John H. Winsloe, at \$8,987 for cleaning the 80 miles of streets in this district between April 1 and Dec. 1, and \$7.72 per day additional for street watering carts; for the West Roxbury district, about 78 miles of streets, to Charles J. Jacobs, 107 Terrace street, at \$13,736 and \$5 per day for watering carts.

Fairhaven, Mass.—William H. Bryant was awarded the contract March 20 by the Board of Selectmen for the collection of ashes and rubbish. The collection of ashes and rubbish in the town has, for the past few years, been a source of debatable ground, and because of this fact an article was placed in the last town warrant, and it was voted to instruct the Selectmen to call for bids. Bryant was selected as the choice, being the lowest bidder among several, including W. H. Dwelly, Antone Sylvia Garcia and Charles E. Stetson.

Springfield, Mo.—The garbage contract for the city for a period of 10 years has been awarded to T. J. Jenkins, city, at \$2,400 per year.

Rochester, N. Y.—The Board of Contract and Supply, Mar. 17, received bids on the sprinkling for the city, which is divided into three groups for the season of 34 weeks. The low bids show that a saving of about \$12,000 will be effected in comparison with the price paid in 1908. Bantel & Hartung bid low on all three groups, and they were awarded the contract for street sprinkling on all three groups at 45 per cent. of the estimated cost, making a total of \$32,534.10.

The American Car Sprinkling Company, of Worcester, Mass., failed to bid low on the group which included street car tracks, but the advent of the latter company is possibly the cause of the low bids by competing firms. The first group designated as 1-25 included all streets except those where there are street car tracks, and a number in the Seventeenth Ward. The last named was designated as group No. 28, and those which may be sprinkled from sprinklers on trolley tracks is numbered 30. For group 1-25 Bantel bid 45 per cent of \$43,642. The American Car Sprinkling Company bid 48 per cent. On group 28 in the Seventeenth Ward, Bantel & Hartung bid 45 per cent. The car sprinkling company bid 48 per cent. On group No. 30, Bantel & Hartung bid 45 per cent; the car sprinkling company bid 48 per cent. The estimated cost on group No. 28 was \$2,804, and on No. 30, \$25,852.

Snow cleaning in Jefferson avenue was awarded to Crouch Brothers at 1½ cents per foot.

Troy, N. Y.—The D. Connolly Boiler Company, of Cleveland, O., was the only bidder for furnishing a flushing wagon for the Department of Public Works; the figure is \$950; the matter was sent to the Commissioner of Public Works.

Easton, Pa.—The following bids were opened by the Department of Garbage Disposal March 22 for the construction and erection of a plant for the incineration of garbage, night-soil, ashes and other refuse: Dixon Engineering & Construction Company, Toledo, O., 25-ton plant in 24 hours, \$11,480 and \$12,530; 35-ton plant in 24 hours, \$14,662 and \$15,862. Power Specialty Co., 111 Broadway, New York, N. Y., 25-ton plant, \$28,811 and \$28,336; 35-ton plant, \$30,462 and \$34,374. Decarie Incinerator Company, Minneapolis, Minn., 25-ton plant, \$24,500;

35-ton plant, \$34,000. K. P. B. Sewerless Sanitary Garbage Furnace, Lancaster, Pa., 25-ton plant, \$24,000; 35-ton plant, \$26,000. David E. Bennett, Wilkes-Barre, Pa., 35-ton plant, \$16,840. Morse-Boulger Destructor Company, New York, N. Y., 25-ton plant, \$10,000 and \$10,500; 35-ton plant, \$10,500 and \$11,000. Lewis & Kitchen, 1200 Michigan avenue, Chicago, Ill., 25-ton plant in 24 hours, \$9,800; 25-ton plant in 20 hours, \$14,600; 25-ton plant in 10 hours, \$25,800; 25-ton plant in 12 hours, \$31,600; 35-ton plant in 20 hours, \$16,900; 35-ton plant in 14 hours, \$23,700; 35-ton plant in 16 hours, \$36,500.—John McNeal, City Engineer, Easton, Pa.

MISCELLANEOUS

Courtland, Ariz.—Bids will be received April 5, 1 p. m., by the Colwell County Board of Supervisors, Tombstone, for the erection of a \$2,500 jail.—H. E. Berner, Clerk.

San Francisco, Cal.—Plans will be received for the erection of a \$4,000,000 City Hall.—Newton J. Thorpe, City Architect.

South Pasadena, Cal.—East Side residents are urging the purchase of Garfield Park by the city.

Vallejo, Cal.—The Board of Supervisors of Solano County are considering the proposed \$325,000 bond issue to provide a new Court House at Fairfield and a branch county jail in this city.

New Haven, Conn.—Wilson H. Lee and J. C. Knoelton, as a Committee of the Committee of One Hundred, have conferred with Mayor Martin relative to the vote of the Committee that the Mayor be asked to appoint a Committee of Five to arrange a general plan for public playgrounds all over the city this summer.

Washington, D. C.—A report has been received from an American consul in a city of northern Europe in which he gives a list of the public works and enterprises projected by the local government, together with the estimates of costs covering the same. These enterprises include construction work, street openings and repairs, and canalization undertakings. Complete list can be obtained by interested American firms by addressing No. 3,216, Bureau of Manufactures.

Dublin, Ga.—J. O. Barnes, Dublin, Ga., desires prices on cement.

Chicago, Ill.—Experts who have been studying Chicago's underground problem have reported that the building of one four-track subway under the business district was feasible and advocated an immediate start on one of the tunnels under Wabash avenue; it is practical to lay four tracks between the present curb lines, leaving room for sub-sidewalk and basement.

Evansville, Ind.—The suggestion of Benjamin Bosse and of the Public Safety Board, that a wharf be established at Wabash avenue and the river, met with the approval of leading citizens of this side.

South Bend, Ind.—The Board of Public Works has been instructed to build public lavatories in the business portion of the city.

West Burlington, Ia.—Citizens will vote on erection of a Village Hall.

Lexington, Ky.—The Park Commission will urge the improvement of Gratz, Elsmere, Fayette and several other small private parks.

Lowell, Mass.—Citizens are urging the establishment of a park in the Little Canada District.

Battle Creek, Mich.—The Board of Public Works has decided to advertise for bids for meters, manhole frames and dirt pails.

St. Paul, Minn.—A new shelter house for Phalen Park has been determined on by the Board of Park Commissioners; Superintendent Frederick Nussbaumer has presented preliminary plans for a fine \$4,600 building; bids will be advertised for at once.

St. Joseph, Mo.—Bids will soon be received by the Buchanan County Board of Commissioners for the sale of 100,000 jail bonds.—S. P. Smith, County Clerk.

University City, Mo.—Citizens will vote on a \$70,000 City Hall bond issue.

Ord, Neb.—J. S. Bussell has deeded the city 60 odd acres of land on condition that it would accept the gift and place an allowance each year for the maintenance of a city park.

Asbury Park, N. J.—Citizens will soon vote on \$150,000 beach bonds; largest improvement is the construction of hot and cold sea-water baths; cost, about \$75,000.

Atlantic City, N. J.—City will sell \$250,000 city bonds on April 10; money will be used to purchase beach front land from owners who have refused to turn their holdings over to the city.

Hoboken, N. J.—The Playground Commission has decided to secure, if possible, the old Cricket Grounds, the various city parks and all available private land for the use of the children.

Newark, N. J.—Edward Balback has offered to sell his property on Ferguson street, Passaic avenue and Chambers street to the Essex County Park Commission.

Newark, N. J.—The Police Board has adopted a resolution requesting the Public Building Committee of Council to provide a new building for the Sixth Precinct station.

New Egypt, N. J.—The Business Men's Council has decided to broaden Oakford Lake about 20 feet to the west bank and to dredge the lake bottom around all the bathing pavilions; buttresses and sluiceway at the waterfall will also be rebuilt.

Perth Amboy, N. J.—City is considering the establishment of playgrounds.—Alderman-at-Large Voorhees.

Brooklyn, N. Y.—Citizens of Ridgewood are urging the converting of a portion if not all of Bushwick Park into a playground for children.

Buffalo, N. Y.—The Board of Aldermen has allowed \$3,000 for an automobile for Chief of Police Regan.

Buffalo, N. Y.—Residents of the South Park section have requested that more benches be placed in that park.

Newburgh, N. Y.—Two plans which, if carried out, will make for a more beautiful Newburgh, are under way and will be presented to the Street Committee of Council for approval; one of these deals with the beautifying of Washington Heights at the south end, while the other calls for notable improvements about St. Patrick's Cemetery.

New York, N. Y.—Architect Theo. E. Videts has prepared plans for a \$45,000 shelter station to be erected in Chelsea Park.

New York, N. Y.—Architects Brinley & Holbrook have prepared plans for a \$2,000 shelter to be erected in Bronx Park.

North Hempstead, L. I., N. Y.—Citizens will vote, April 6, on \$35,000 bonds for a public park and bathing beach.

North Towanda, N. Y.—The Board of Trade has recommended the establishment of parks.

Rochester, N. Y.—The Eighteenth Ward Civic Club is urging the purchase of a 11-acre lot near No. 11 school as a site for a park; Committee of Playgrounds is planning to build an extension to the Brown street playground, if their request for a further appropriation of \$3,000 is granted.

Rome, N. Y.—Dr. and Mrs. Christopher C. Reed, of North Washington street, have announced that they are shortly to deed a playground or athletic field for children to the city; plot comprises some ten acres of land on North James street.

Syracuse, N. Y.—City Engineer Allen has designated Charles E. Colton as the architect to plan the remodeling of the City Hall.

Troy, N. Y.—Authority has been given the Commissioner of Public Works to purchase a card index and cabinet for the office of the City Engineer to be utilized for street records.

Utica, N. Y.—The Board of Public Works will acquire a site in the central part of the Eighth Ward for the erection of a public bath for East Utica.

Wolcott, N. Y.—The voters have decided to accept the deed to the park extension and remove the fire house from the park.

Dayton, O.—Councilman Harry Wolfensparger is considering the introduction of an ordinance compelling the placing of safety fenders on all interurban cars.

Alva, Okla.—Citizens will vote April 6 on \$7,000 City Hall and jail bond issue.

Donora, Pa.—W. S. Spragg, Burgess, has recommended the erection of a borough building.

Ebensburg, Pa.—Architects Boyd & Hall, Johnstown, have prepared plans for a \$100,000 jail building.

Fernwood, Pa.—Large delegations of citizens of Addingham, Oakview, Garrettsford, Fernwood, East Lansdowne, Primos, Cardington and Millbourne have presented a strong petition to the Commissioners urging that the Board pass an ordinance to place fire hydrants and street lights and to give the township better police protection.

Philadelphia, Pa.—Orders to begin work on the Delaware River survey to ascertain the cost of deepening the channel to 35 feet have already been issued by the Chief of Engineers to Major Deakne, the Engineer in charge of the Philadelphia district; instructions include both the survey from Philadelphia to the sea and from Philadelphia to Trenton, where the river is to be deepened to 14 feet.

Philadelphia, Pa.—The Construction Company General, 547 Drexel Bldg., Philadelphia, Pa., desires to correspond with manufacturers of concrete mixers.

Philadelphia, Pa.—The Northwest Business Men's Association is urging the establishment of playgrounds.—C. L. Fluck, Chairman on Playgrounds.

Pittsburg, Pa.—Three motor patrol boats

operated by the Bureau of Police will be launched on the Monongahela, Allegheny and Ohio rivers this summer, if the recommendations of the Public Safety Committee of Councils prevail; Committee has taken up the ordinance, which was presented to Councils some time ago, and which provided for one police boat to cost not more than \$2,000; on the suggestion of Captain Frank A. Gould, the ordinance was amended to recommend three boats at a cost of not more than \$2,000 each.

Pittsburg, Pa.—The County Commissioners and the Committee of Judges of the Courts have instructed County Engineer J. T. Chalfant to prepare plans for a Court House annex, to be erected on the site of the Pittsburg Academy.

Wilkes-Barre, Pa.—The Joint Police Committee has been authorized to purchase badges, hat pieces, handcuffs and legions for the Police Department.

Pulaski, Tenn.—R. A. Swaim will purchase concrete mixer, three to five yards per hour capacity.

Dallas, Tex.—The Park Board has closed the deal for the Marsalis Park site in Oak Cliff, also instructed Assistant City Attorney Robertson to proceed with the investigation of the title to the Cotton Mills Park site.

El Paso, Tex.—The County Judge has been authorized to sell \$25,000 jail addition bonds.

Waco, Tex.—The ladies of this city will create a park near the old suspension bridge, known as the old Waco spring; a landscape gardener will soon be employed to lay out the park.

Clifton Forge, Va.—City will erect municipal building.

Seattle, Wash.—Mayor John F. Miller, City Comptroller Harry W. Carroll, City Treasurer W. F. Prosser and City Councilman Frederick Sawyer, Chairman of the Finance Committee, have sold to the First Trust and Savings Bank, the Merchants' Loan and Trust Company and A. B. Leach & Co., of Chicago, municipal bonds to the value of \$1,000,000—\$500,000 park bonds and \$500,000 light extension bonds.

Seattle, Wash.—The contemplated improvement of the Duwamish River from its mouth to the south city limits will cost in the neighborhood of \$400,000, according to estimate submitted to the Executive Committee of the Duwamish River Improvement Club; estimate is based on the report of a Board of Engineers who went over the ground thoroughly two years ago and submitted a report on the improvement of the Duwamish River.

Tacoma, Wash.—County Commissioner Torger Peterson, with the assistance of Professor Lancaster of the State University, has located the site for a rock crushing quarry at Kapowsin.

Charleston, W. Va.—Former Senator Henry Gassaway Davis has stated that he would purchase the property at the corner of Capitol and State streets now owned by Solomon Meyer, and give it to the city for a public park.

Qu'Appelle, Sask., Can.—Bids will be received, March 31, for 500 sacks of cement, 60 slush scrapers, capacity 7 cubic feet; 4-wheel scrapers, capacity 13 cubic feet.—J. C. Starr, Secretary-Treasurer, Municipality of South Qu'Appelle.

Toronto, Ont., Can.—The by-law to raise \$700,000 for the new sea wall will be submitted to the ratepayers on May 8.

BIDS RECEIVED AND CONTRACTS AWARDED

New Haven, Conn.—In order to stop the inroads of the elm beetles and other similar parasites, Director Foley has purchased a spraying machine for the city from the W. & D. Douglas Company, of Middletown, Conn., for \$1,100; it has a 10-h.p. engine and is capable of throwing two streams of chemicals into the air to a height of 80 feet.

Louisville, Ky.—Bids for the interior furniture of the City Hall Annex were opened March 27 by the Board of Public Works, and this contract will be let within the next few days; three bidders sought the contract, the lowest bid being \$12,350, submitted by the Wollaefer Manufacturing Company, of Milwaukee, Wis.

Hagerstown, Md.—The Commissioners have received bids for 100 tons of sand and 100 barrels of cement, each quantity to be more or less. The bidders were Cushman & Son, Steffy & Findlay and C. M. Horst. The contract was awarded to Cushman & Son, the lowest bidders. Their price was \$1.58 for Security cement and \$1.15 per ton for sand.

Butte, Mont.—The County Commissioners have awarded the contract for the removal of the Rice house on West Quartz street, and the necessary excavation work for the proposed new county jail to George M. Smith, the lowest bidder, the contract price

is \$4,233 for the work and \$1.25 per cubic yard for all extra excavation. The following were the bids. George M. Smith, \$4,233 and \$1.25 per cubic yard for excavating; Jess Huddleston, \$4,600, \$1.35 per cubic yard for excavating; G. W. Kariman, \$5,200 and \$1.50 per cubic yard for extra excavating; W. J. Whitney and R. W. Farmer, \$5,250 and \$1.50 per cubic yard for extra excavating; Hennessy Brothers & Stickler, \$5,449 and \$1.25 per cubic yard for extra main building excavation and \$1.75 for trench work; Carter & Semmons, \$5,497 and \$2.25 for extra excavating six feet deep and \$2.75 per cubic yard for extra excavation deeper than 6 feet; James Welch, \$6,000 and \$1 per cubic yard for extra excavation; J. W. Marshall, \$6,100 and \$1.50 per cubic yards for extra excavation work. The work is to be done according to the plans and specifications of Architects Link & Halre.

Princeton, N. J.—The bids for remodeling the property of the Swann estate has just been awarded J. P. Thompson, with a bid of \$17,900. The plans provide for a remodeling of a large residence so that it will be suitable for a Town Hall, the name of which will be "Thompson Hall." It also provides for the re-arrangement of the stables that this building may be used by the Mayor and Council.

Pittsburg, Pa.—Bids were opened at noon, March 19, in the United States Engineer's office, Federal Building, for machinery for Dam No. 5, at Brownsville, Pa., on the Monongahela River, and the J. & J. B. Millholland Company was the successful bidder on the entire machinery equipment, being the lowest among 15 bidders. The price, approximately, is \$15,000.

Bellefourche, S. D.—The People's Construction Company, of Davenport, Ia., has been awarded the Government contract for the construction of the concrete work of controlling part of the irrigation system which is to be built at Bellefourche, S. D.; two large construction outfits are to be sent to the scene of the work at once, and work will begin immediately upon the arrival of the crews. The contract is one of the largest which has been undertaken by the company for some time, and the date set for the completion of the job is October, 1910. Three construction outfits will be actively engaged upon the work, which it is expected will be in full swing by April 1. The concrete work is for the sluiceways and the dam which are to be a part of the irrigation system for the low country in that section.

PATENT CLAIMS

914,963. Corrugated Metallic Culvert. Howard Mallery, Owego, N. Y. Serial No. 437,629.

In a metallic culvert comprising a number of corrugated sheet metal plates so bent as to form an arc of a circle, thus leaving an opening at the bottom thereof, smooth bottom or closure plates bent to form the other arc of the circle, and rivets for securing said bottom plates over the opening left between the edges of the corrugated plates, as described.

915,052. Road and Method of Building Same. Amzi L. Barber, Washington, D. C., assignor to the A. L. Barber Asphalt Company, New York, N. Y., a Corporation of the District of Columbia. Serial No. 473,100.

A road comprising a suitable foundation, a lengthwise strip of fragmentary, granular material and another lengthwise strip of smooth, substantially indestructible material at least wide enough to accommodate an ordinary four-wheeled vehicle.

915,316. Concrete-bridge Construction. William M. Thomas, Santa Cruz, Cal. Serial No. 413,365.

In a bridge construction, a reinforced concrete abutment comprising a large, thickly reinforced concrete slab extending under entire abutment, a portion of which slab forms an invert of an arch that is taken out of the abutment, leaving an arch with two piers resting on invert slab; the outside pier having a cantilever arm extending outwardly from it and which forms a portion of a large arch, and the soffit of which forms the intrados of portions of large arch; said cantilever arm having at its extremity a semi-circular skewback or portion of hinge securely bolted to longitudinal reinforcing; said abutment being built in longitudinal reinforced ribs, reinforced with cross walls and horizontal reinforced floors which form compartments in abutment which may be filled with sand or rock to save concrete material.

915,492. Road-Machine. Marion M. Sickler, Buffalo, N. Y. Serial No. 407,007.

In a road machine, a frame, two supporting wheels at one end of the frame, a single supporting wheel at the other end of the frame, a steering device for the two wheels, a steering device for the single

wheel, and means for raising and lowering the said single wheel.

915,640. Press for Making Sewer-Pipe and the Like. Calvin W. Vaughn, Cuyahoga Falls, Ohio. Serial No. 328,667.

In mechanism of the class described, the combination with superposed vertically arranged clay and steam cylinders, of a frame for supporting the same, such frame comprising a suitable base, a plurality of forwardly-inclined masts mounted on the base near the rear end thereof and connected to said clay and steam cylinder, gusset plates for securing said masts intermediate their ends, a plurality of vertical struts, and a laterally projecting platform secured to the lowermost of said cylinders.

INCORPORATIONS

Grimes Automatic Gas Regulator Co., Elkins, W. Va.; capital, \$25,000. Incorporators: S. H. Watring, A. C. Rowland, Blain W. Taylor and others. Will manufacture patented device for regulating and controlling natural and artificial gas.

Guptill Co., Boston, Mass.; manufacturing and sale of insect sprayers and forestry supplies of all kinds; capital, \$15,000. President, Calvin H. Guptill, No. 67 Upham street; treasurer and clerk, Melvin Guptill, No. 9 Grove street, both of Malden; attorney, William R. Buckminster, No. 450 Tremont Building, Boston.

Home Comfort Water Works, Stigler, Okla. Incorporators: R. E. Rogers, W. H. Brown, A. L. Beckett and J. F. Lawrence.

Hopewell, Light, Heat and Power Company, Hopewell Junction, N. Y.; electric light, heat and power; capital, \$50,000. Incorporators: Charles J. McKeown and Sophy McKeown, Hopewell Junction; Philip Schantz, Highland, N. Y.

Johnston & Rhodes Blue Stone Company, Horton, N. Y.; to operate stone quarries; capital, \$50,000. Incorporators: Thomas D. Johnston, Harry Johnston, Irving Cochrane, Horton, N. Y.; Floyd M. Rhoades, 56 Morningside avenue, New York.

Mashek Engineering Company, New York, N. Y.; dredging, contracting and engineering; capital, \$50,000. Incorporators: George J. Mashek and Henry S. Anderson, 90 West street; Gustav Frieling, 42 Broadway, all of New York.

Monarch Engineering Company, Buffalo, N. Y.; general contractors and engineers; capital, \$25,000. Incorporators: Harry R. Wait and B. L. Wait, Buffalo; Thomas H. Hennessy, Oswego, N. Y.

Monks-Ripley Pile Company, New York, N. Y.; manufacture piles, build sewers, contractors, etc.; capital, \$5,000. Incorporators: John W. Ripley, Flushing; Herbert L. Fordham, William K. Hammond, Jr., William B. Devoe, 49 Wall street, New York.

North Shore Electric Light and Power Company, Port Jefferson, N. Y.; electric lighting; capital, \$25,000. Incorporators: Fred C. Griswold, Frank C. Dildine, Luther H. Chambers, George E. Dorling, Port Jefferson, N. Y.

Oklahoma Contracting Company, Oklahoma City, Okla.; capital, \$10,000. Incorporators: John B. Davidson, A. C. Root, both of Oklahoma City, and Michael McGovern, Chicago, Ill.

Solon Electric Light Co., Solon, Me.; to sell electricity; capital, \$10,000. President, C. A. Paul; treasurer and clerk, P. S. Longley, both of Solon.

Southern Construction Company, Kingston, Tenn.; capital, \$50,000. Incorporators: W. H. Grannis, T. A. Christmas, W. H. Spencer and others.

Southern Engineering Co., Dallas, Tex.; capital, \$5,000. Incorporators: Robert L. Shaffer, Henry M. Reynolds and John F. Bruhns.

South Jersey River Development Co., Vineland, N. J.; to construct dams for generating water and electric power; capital, \$100,000. Incorporators: Elwood C. Potter, Marcus Fry, Winslow W. Walls, Vineland, N. J.

Walling Light & Power Co., Walling, Tenn.; capital, \$5,000. Incorporators: Jesse Walling, H. R. Walling, S. J. Stroud and others.

Westport Paving Brick Company, Westport, Station Baltimore, Md.; capital, \$250,000. Incorporators: J. Kemp Bartlett, Charles J. Taylor, Merville H. Carter, and others, all of Baltimore.

Winfrey, Schiaffi & Porter, Houston, Tex.; civil, mechanical and industrial engineering and contracting. Incorporators: H. P. Porter, general manager; have additional associate members.

Wyllie-Saylor Granite Company, Newark, N. J.; mining; capital, \$25,000. Incorporators: David Wyllie, Warren K. Saylor, Lizzie L. Wyllie, Anna Eliza Gaylor, as above.

TRADE NOTES

Cast-Iron Pipe.—Chicago: Owing to the decline in pig-iron, cast-iron pipe prices are weaker. Quotations: 4-inch, \$27.50; 6 to 12-inch, \$26.50; 16-inch and up, \$24.50. Birmingham: The cast-iron pipe market is believed to be stronger because of the reduction in producing capacity. Quotations: 4 to 6-inch, \$26; 8 to 12-inch, \$25; over 12-inch, average, \$24. New York: Current transactions are not large, but reports are that a number of enterprises requiring large quantities of pipe will be carried through this summer. Quotations: 6-inch, car-load lots, \$23.50, at tidewater.

Pig Lead.—The market is very firm. Considerable business has been booked by the leading interest at 4 cents. Outside sellers are asking 4.05 cents for similar lead, but for spot shipment. In St. Louis the market is firm at 3.90 to 3.95 cents. Many believe that the prevailing low prices are due to tariff agitation.

Garbage Reduction.—The Standard Reduction and Chemical Company, St. Louis, Mo., has shipped the first carload of garbage to the company's plant at Sands, St. Louis County, near the St. Charles Bridge. The company proposes to reduce the cost of garbage reduction from \$1.35 a ton, which it is now costing the city, to 27 cents, and guarantees sanitary disposal. The 27 cents will hardly repay the cost of transportation from the city to the garbage plant, but the company proposes to extract enough valuable products from the city's waste to more than pay the cost of reduction. For seven years or more the city has been paying large sums annually to have the garbage eaten by swine on Chesley Island, south of the city, and has gained a reputation for having the most unsanitary garbage disposal system in the country, besides adding an average of 1½ cents per \$100 to the city taxes. If the present system, or something similar, had been installed when the Chesley Island plan was inaugurated the city would have saved over \$500,000; that is, garbage disposal would have cost about \$100,000 instead of \$675,000. Garbage collected in St. Louis amounts to about 45,000 tons a year, of which about three-fourths, or about 33,000 tons, is collected during the summer months. The cost of collecting this 45,000 tons and delivering it to the receiving stations is about \$210,000 a year; but this will also be materially reduced by the new system. Two receiving stations have been provided—one at the foot of Chouteau avenue and the other at the foot of Mullanphy street. The shortening of the haul will save something in the cost. The cost of collection will probably be reduced to \$1.50 a ton. Dumped from wagons into the receiving stations after being weighed, the garbage is to be loaded at least once in twenty-four hours into large tank cars and transported to the plant. From three to ten or twelve carloads a day will be moved. The promoters of the plant claim that it will be almost entirely odorless, and in the contract between the city and the company, which is to run 10 years, and is secured by a \$50,000 bond and a cash deposit of \$10,000, it is specially provided that all processes of transportation, loading and unloading, shall be sanitary and odorless. Every conveyance connected with the transportation must be thoroughly cleaned every day.

Ballot Box.—A new ballot box has been invented by City Clerk James F. Connelly, of Newark, N. J. The new device is not greatly unlike the box now in use in shape of construction. It will be of wood, with glass sides. But instead of the somewhat intricate and unreliable mechanism of the present box in the depositing of the ballot and envelope, the Connelly box is operated by the judge of election by merely touching a spring that opens a small shutter in the top of the box. The envelope containing the ballot is slipped through this shutter and is automatically strung by the flap of the envelope to a pole inside the box. The stringing is done on a wire device and in such manner that the ballot is not pierced. There are four of these poles in the interior of the box, and these are operated automatically, so that when one string is full it is moved along and another takes its place. Each vote is recorded by the ringing of a bell in the box, and the same mechanism that does this locks the shutter at the top and the box remains that way until unlocked again by the pressure of the judge's finger on the releasing spring. It is impossible to remove either a ballot from its envelope or an envelope from the box until the whole top is removed. In the counting of the ballots, the latter are removed from the envelopes and afterward replaced, but the envelopes are not taken from the poles upon which they were automatically strung when voted. Provision is made to obviate any chance of keeping tally of the ballots by comparison with the poll book by an arrangement that is intended to destroy the identity of the individual poles within the box.

Advertising Engineer.—A. Eugene Michel, who has for the past three years been manager of the Geo. H. Gibson Company, advertising engineers, has just opened new offices at 1572 Hudson Terminal Building, New York. Mr. Michel will in future confine his efforts as an advertising engineer to the promotion of steam specialties and apparatus, power transmission appliances and machine tools, and will limit his clientele to the number of firms to whose work he can give personal attention.

Centrifugal Pumps.—The D'Olier Engineering Company, Philadelphia, Pa., has recently issued catalogue T, describing the horizontal centrifugal pumps. The company claims to be able to develop economical pumps with heads up to nearly two hundred feet in a stage. The catalogue referred to is handsomely illustrated, showing different types and details of construction.

Tracing Cloth.—Requina Manufacturing Company, East Greenwich, R. I., is the only manufacturer of tracing cloth in the United States. A great deal of money has been expended by people in this country in the endeavor to make tracing cloth, but without success. The plant of the Requina Company is new, and the output is about one hundred and twenty-five rolls per day, twenty-four yards each. They are making at present only the three widths, 30, 36 and 42 inches wide, but expect to make the other widths shortly. The cloth, placed on the market under the trade name of United States Tracing Cloth, is very transparent, uniform in texture, takes ink and color well, lays flat, does not buckle, creases perfectly and its surface is free from grease.

Asphalt Highways by National Aid.—The A. L. Barber Asphalt Company, 90 West street, New York City, publishes in pamphlet form an address by Amzi L. Barber, delivered before the Independent Asphalt Association in Washington. Referring to his long connection with the street paving business and his practical study of the subject in America and Europe, Mr. Barber makes a proposition for a new method of construction for highways where there is more traffic than macadam roads will stand. He proposes the construction of a narrow strip, varying in width according to the traffic in the center or at the side of an ordinary macadam road. Automobiles and heavily loaded wagons would naturally travel over the paved strip, leaving the macadam for rapidly moving horse-drawn vehicles, and besides providing space for vehicles going in opposite directions to pass each other. For economy in construction portable asphalt plants have been devised which will move along the road delivering the mixed material on the roadway where it can be immediately raked out. This plan should effect considerable economy in construction. A bill is now pending in Congress providing for an appropriation of \$20,000,000 to pay a portion of the cost of construction of a system of national roads. If this is passed it is believed that the asphalt highway will come into prominence.

Creosoted Timber and Paving Blocks.—The Wyckoff Pipe and Creosoting Company, 50 Church street, New York City, in Catalogue D describes creosoted conduit for underground wires, creosoted poles, crossarms, anchor blocks, signal posts, poles, crossies, fence posts, poles, wharf and bridge timbers, paving blocks and planks. For treating paving blocks the Wyckoff company uses 20 pounds per cubic foot of the best creosote oil. The process is that used in England for seventy years. No resin is mixed with the creosote.

Fire Hose and Appliances.—The Eureka Fire Hose Manufacturing Company, New York, N. Y., publishes a catalogue of 225 pages, bound in flexible leather, enumerating its brands of fire hose and supplies for fire departments, railways, steamships, wharfs, factories, hotels and public institutions. To give an idea of the number of articles supplied by this company it may be mentioned that the index occupies nine pages. The description and illustration of kinds of fire hose occupies 44 pages, couplings 13 pages, nozzles, chief among them the Hart, 22 pages. The Vajen Bader helmet is a device the importance of which is attracting increased attention among firemen. The Matthews Bronze Lined Hydrant is handled by the Eureka company. Among the comparatively new apparatus is the Watrous gasoline fire engine.

Pressure Regulation.—The Foster Engineering Company, Newark, N. J., manufactures a pressure reducing valve capable of reducing 300 pounds to a delivery of from 10 to 100 pounds per square inch. The valve is neat, compact, attractive in finish and design, entirely self-contained without outside levers, weights, dash pots or rigging of any kind. The manufacturers claim simplicity, efficiency and durability for their valve.

Removal Notice.—The MacDonald Construction Company and George MacDonald have moved their office to 146 Broadway, New York, N. Y.

PROPOSALS

FURNISHING AND LAYING SEWER PIPE

Auburn, N. Y., March 20, 1909.

Sealed proposals will be received by the Mayor, Hon. C. A. Koenig, until 8 P. M., April 20, 1909, for the construction of sewers and appurtenances thereto. The sewers to consist approximately of the following: 20,650 feet of 8-inch, 10,250 feet of 10-inch, 5,300 feet of 12-inch, 4,850 feet of 15-inch, 2,500 feet of 18-inch, 2,350 feet of 20-inch, 2,850 feet of 22-inch, 1,000 feet of 24-inch.

Excavation varies in depth from 5 to 20 feet. There will be approximately 75,300 cubic yards of excavation. There will be about 23,600 feet of 5-inch vitrified tile for house sewer connections to be laid from the main sewer to the curb line. There will also be laid in the main trench and underneath the main sewer, as ground water demands, subsoil drains about as follows: 4,500 feet of 4-inch, 6,300 feet of 6-inch. All of the subsoil drain tile to be vitrified tile known as seconds. One hundred and eighty manholes, 5 flush tanks, 3 lamp holes.

A bond for an amount equal to one-half the gross amount of the contract, or a certified check for \$7,500 will be required of all bidders. The Common Council reserves the right to reject any or all bids.

Specifications, general plans, blank forms of proposals, etc., will be furnished upon application by the City Engineer, W. Thomas Wooley, and will be ready for distribution March 20, 1909.

J. S. HANLON,
City Clerk.

(12-15)

SEWER SYSTEM AND AUXILIARY WATER SUPPLY SYSTEM

Notice to Contractors

City and County of San Francisco, Cal.

The attention of contractors is directed to the fact that the City and County of San Francisco proposes to construct a new Sewer System and an Auxiliary Water Supply System for Fire Protection. The total cost of the Sewer System will be \$4,000,000.00. The estimated cost of the work included in the individual contracts to be let during the current year ranges between \$50,000.00 and \$300,000.00. A number of adjacent contracts will, from time to time, be let on the same date, giving the contractors an opportunity to secure contracts for several pieces of work at the same time.

The total cost of the Auxiliary Water Supply System is \$5,200,000.00. The work which it is proposed to contract for during the current year includes the construction of 50 reinforced concrete fire cisterns, the laying of 91 miles of cast-iron water pipe, the construction of two salt-water pumping stations, and the construction of two reinforced concrete reservoirs.

On all of the above contracts, monthly payments will be made.

Further information can be obtained from Robt. Loughery, Secretary of the Board of Public Works, San Francisco, Cal.

CHAS. A. DAY,
President.

MICHAEL CASEY,
JOHN D. MCGILVRAY,
Commissioners of Public Works.

MARSDEN MANSON,
City Engineer.

(13-17)

SANITARY SEWERS

Muskegon, Mich.

Sealed bids will be received at the office of the City Recorder, Muskegon, Michigan, up to 12 o'clock noon of the 5th day of April, 1909, for the furnishing of the material and the performance of the work of constructing certain sanitary sewers in Special Sewer District No. 8.

Plans and specifications of the same are on file in the Recorder's office. Estimated cost, \$12,235.17.

Each bidder will be required to deposit with his bid 5% of the total amount thereof as security for the performance of the proposal tendered by him if his bid be accepted.

The City reserving the right to reject any and all bids.

BENJ. H. TELLMAN,
City Recorder.

(11-13)

REINFORCED CONCRETE RESERVOIR

South Bend, Ind.

Sealed proposals will be received by the Board of Public Works of the City of South Bend, Indiana, up to 10 o'clock A. M. on April 9, 1909, for furnishing all materials and labor for constructing a reinforced concrete reservoir of 1,000,000 gallons capacity.

Plans and specifications are on file with said Board and a certified check amounting to 2½ per cent of the bid will be required with the proposal.

The right to reject all bids is reserved.

W. A. McInerney,
Pres't Board of Public Works.

A. J. HAMMOND, City Eng'r.
South Bend, Ind., March 23, 1909.

The Deckman-Duty Brick Co.

Cleveland, Ohio

Paving Brick and Block

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LIQUID ASPHALT

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For unexcelled quality specify Bessemer Paving, Sewer and Faced Brick

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